RELOADING *for* SHOTGUNNERS

5th Edition

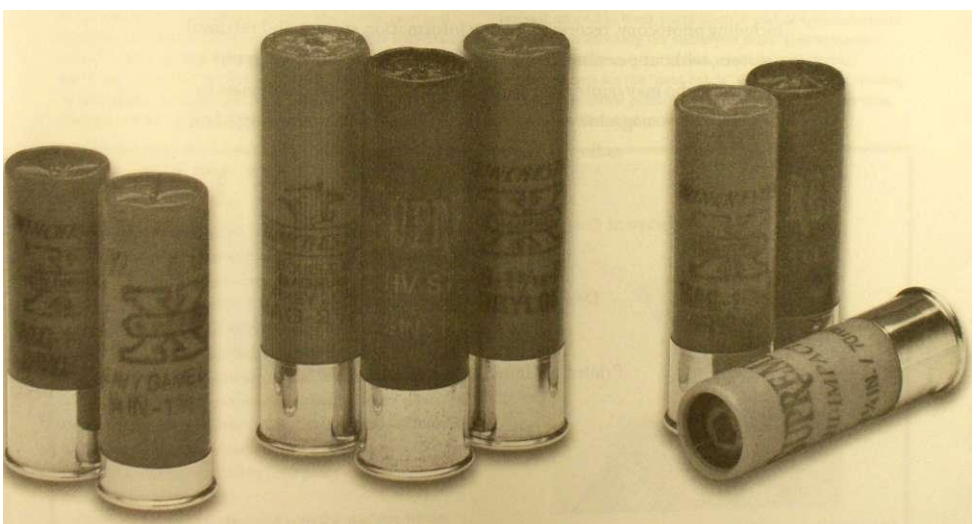
- 2″ to 3-1/2″ hulls
- Lead and non-toxic loads
- All-New Listings
  - .410 bore
  - 28-gauge
  - 20-gauge
  - 16-gauge
  - 12-gauge
  - 10-gauge

Rick Sapp
with a foreword by Kurt Fackler,
Ballistic Products, Inc.

RELOADING *for* SHOTGUNNERS

5th Edition

Complete How and Why of Shotshell Reloading for Hunters and Competitive Shooters



Rick Sapp

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FOREWORD

By Kurt Fackler, Ballistics Products Inc.

The continually evolving nature of shot shell reloading is one of the most apparent things that set our hobby apart from other pursuits. In my case, state of the art makes it far more interesting to stand in front of a reloading press than say, a potter's wheel, with my fingers endlessly circumnavigating a clump of clay.

Chronicling the state of the art of shotshell ammunition is similar to the very nature of shotgun sports: getting a fix on a moving target, calculating your lead and following through. In *Reloading for Sbotgunners*^ 5'^h^ Edition, Rick Sapp has stepped up to make some noise and break a few clays.

Modern, non-toxic pellets and the recipes to make shotgun ammunition are, in many cases, superior to similar lead-pellet loads.This is an outcome many of us hardly dared dream of 25 years ago, when it became federal law to use nontoxic pellets for migratory waterfowl hunting.At that time, the ammunition industry had to re-examine everything, including the most fundamental question: "What makes an effective shotshell?" Everything until that point seemed rather self-evident.

A modern shotshell is defined differently than it was even 10 years ago, when the previous edition of *Reloading for Sbotgunners* was published with Mic McPherson and myself contributing.Today, we have several new non-toxic pellet choices for handloading. Some of these, like HeviShot, are denser than lead. In 2005, we can shoot waterfowl and upland game carrying favorite old double guns, loaded with Bismuth NoTox pellets in any gauge, without worrying that the pellets will damage our barrels and without leaving toxic ejecta scattered in the marsh. Steel shot handloading continues to evolve over the course of time. Handloaders have new powders with customized burn rates available; these powders are specifically designed for steel shot payloads. We have improved, tweaked and designed steel shot load data, components and classifications in this time as well. By any standard, modern steel loads are recognized as excellent waterfowling ammunition. Furthermore, because steel pellets are the new industry standard for waterfowl loads, their use has become an economical option.

Rick's perspective and research in *Reloading for Sbotgunners #5* are fresh.The book is not just a reference manual; his writing style will keep you reading. Even if you already know everything there is to know about reloading shotshells, reading this book adds up to a chance for you to see your hobby in a different light - focusing perhaps on previously unremarked contours of hand-loaded shells.

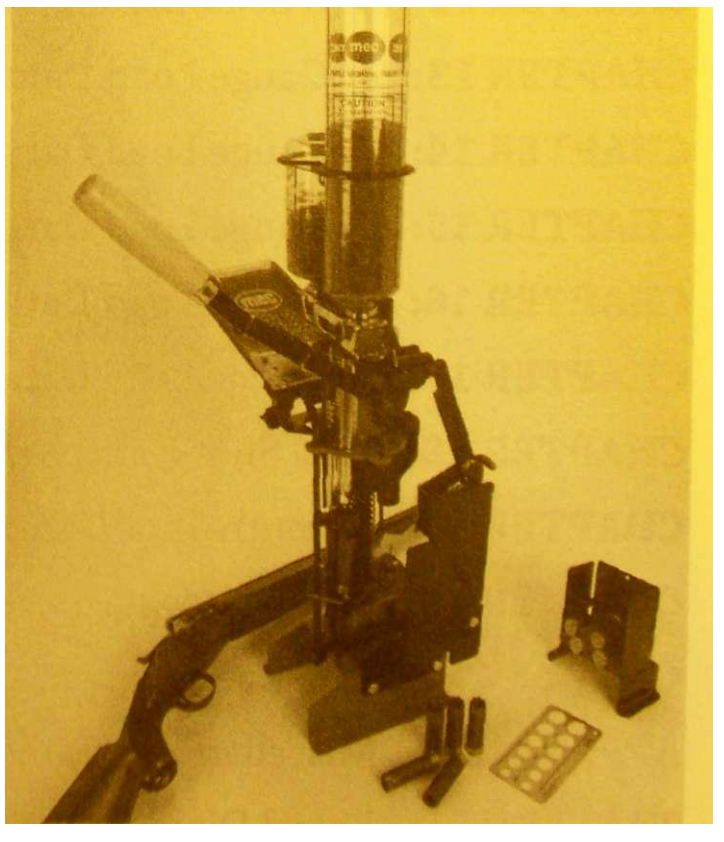
Though time away from the potter's wheel may mean we use store-bought coffee mugs and ashtrays, I contend that reloading shotshells is also a productive, useful way to spend some leisure time. Reloading, for many of us, is a rewarding pursuit, an end in itself, particularly if part of your enjoyment comes from shooting the shells you make.This immediate feedback will keep your brain in motion, considering improvements for the "next batch." For these reasons, making "the best shotshell possible" will remain forever interesting and grass will not be growing underfoot.

ABOUT THE COVER

Available separately in 12,16,20,28 gauge and .410 bore, Mayville Engineering Company's (MEC's) 9000GN Series Progressive Shotshell Reloading Press continues to represent MEC s continued dedication to precision engineering.

The 9000GN automatically indexes each shell through the reloading process **and has finished shell ejection. This is the smoothest indexing system ever made. MEC s factory-set speed provides a uniform movement through every reloading stage regardless ofpperator action. The 9000GN also features MEC s newly designed automatic primer feed system. The new system features larger capacity (200-plus primers) and tips back flat for easy refilling.**

Other accessory items featured with the machine are the Bottle Support, which helps to stabilize the bottles during the reloading operation the E-Z Pak, which neatly ftacks 25 shells **for placement in empty shell boxes; and the** MEC Shell Checker, which **measures the** brass for proper *sizing,*



Complete information on the 9000GN or any other reloaders or accessories that MEC manufactures can be obtained by visiting their website at www.mecreloaders.com or by calling their Customer Service Department at 1-800-797-4632.

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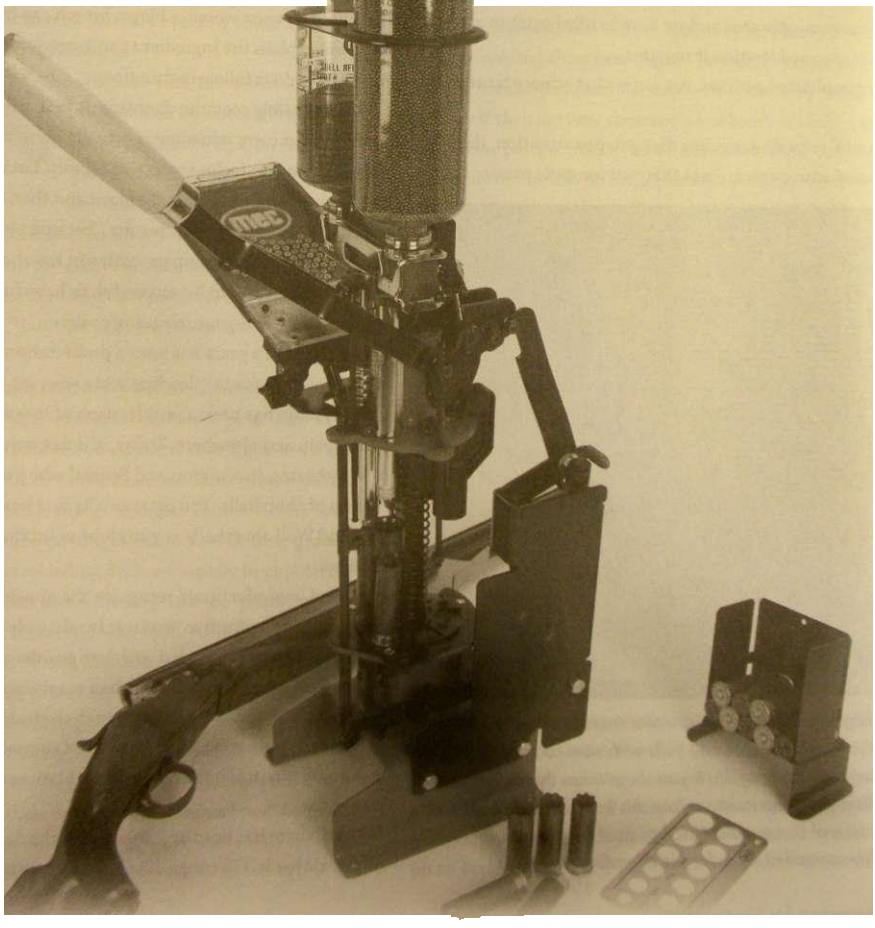
Section

The Art and Mystery of Shotshe Meloading



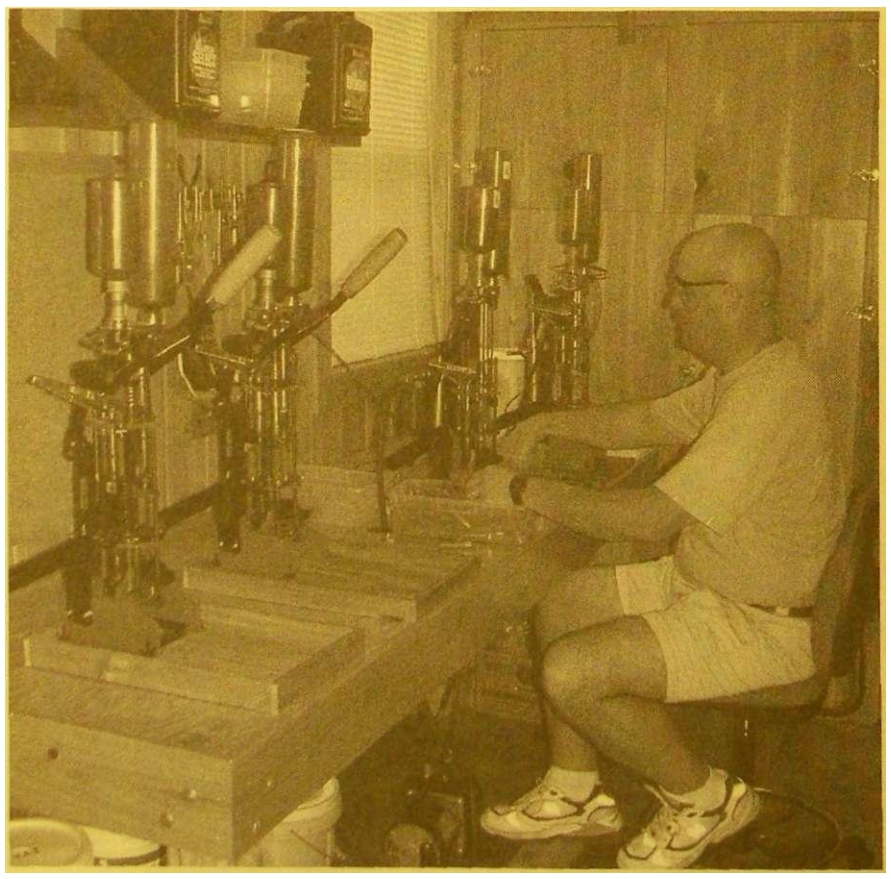
Chapter 1

WHAT IS RELOADING... AND WHY SHOULD YOU BOTHER? I

Reloading is nothing more than filling shotshells so that they can be fired again. But that is way too simple a definition and you know that much already or you would not be reading this. So, obviously, reloading is ... and means ... a lot more than the simple act of putting powder and shot together, in the proper sequence, at the proper weights, and so on. See, reloading has already become more complicated and we have hardly begun to give it the thorough consideration it requires.

More complicated perhaps, but not rocket science by any means.

Successful reloading requires that you pay attention, that you proceed with caution - not that you compute exotic equations or decipher arcane hieroglyphs. Building shotshells means following recipes, just like in the kitchen. One-and-a-quarter hours at 425-degrees Fahrenheit means exactly that. If you err and turn the oven to 400, your dish will be undercooked. Turn it to 450 and it will scorch. In the same vein, if you underload the powder, the shot will not achieve its most effective velocity. Over-load and you can damage your shotgun; and even worse, a blown breech can hurt you. This book will explain the ingredients and supply the recipes. All you have to do is follow instructions.



Reloading and handloading are two ways **to** *speak about the same thing, refilling shotshell hulls with new components so that you can shoot them again. If you shoot more than a few boxes of shells a year, you must explore this fascinating hobby. Scott Richardson* **of** *Gainesville, Flahas built a temperature" and humidity-controlled room for his reloading presses.*

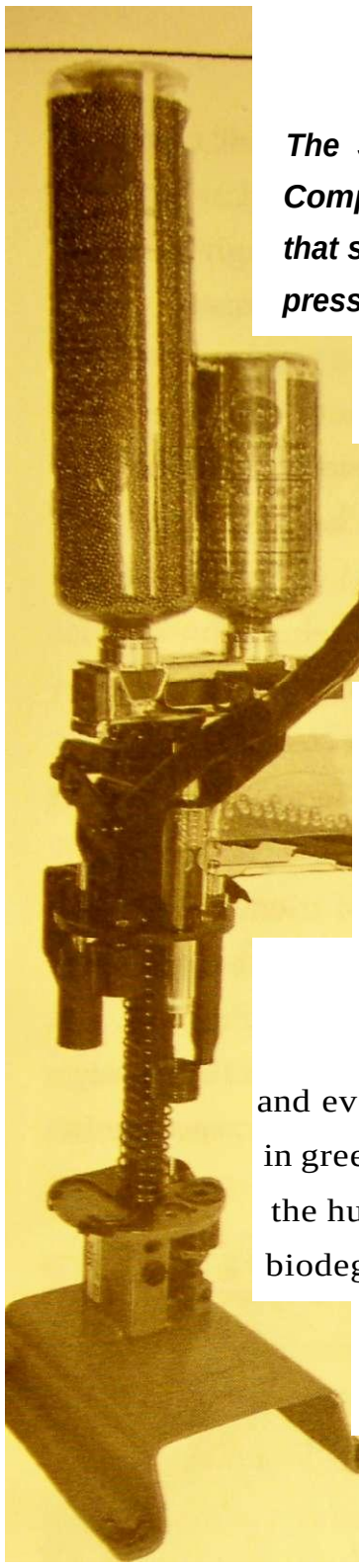
While possibly seeming daunting at first, especially if you learn on your own, reloading is actually quite easy. (It may seem like you are feeling your way blindly, but that is where this book will help.) Expect to reload and then shoot your shells successfully, with excellent results, because you can. Every individual and every company active in the shooting sports industry wants you to be successful, to have fun and to reach your shooting and your reloading goals.

The last dozen years has seen a proliferation in three types of loads that have made reloading more relevant than ever.

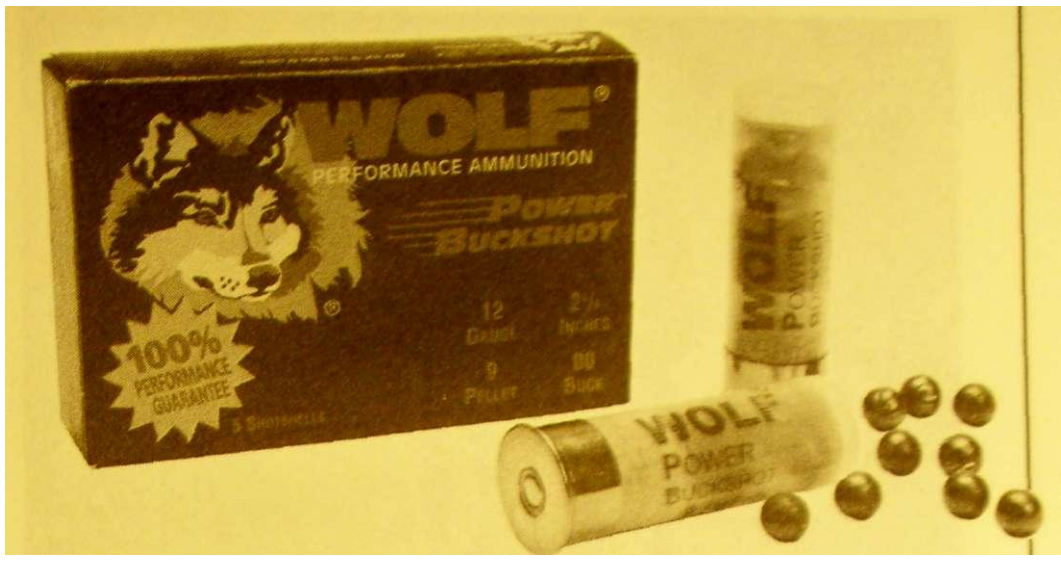
First, there has been a proliferation of inexpensive shells from Spain and elsewhere. Today, it is not only the "Big Three" of Winchester, Remington and Federal who provide a diverse line-up of shotshells. You occasionally find boxes of Clay, B&P, Eley and Wolf shotshells at gun clubs or on the shelves of local retailers.

Second, manufacturers recognize the growing interest in lighter, but still effective, loads. It is relatively easy now to locate shells that are loaded with less powder and less shot, rather than more: minis rather than magnums. There was an era in the '70s and '80s when every shell strained for maximum power and greatest possible impact. Of course that meant maximum physical punishment from blast and recoil. This is no longer the case.

Third, there has been an explosion in the development of non-toxic loads. Offerings of bismuth, tungsten-compounds



The Sizemaster by Moyville Engineering Company or MEC is a single stage reloader that sells for less than $ 180. This inexpensive press will build all gauges. Begin learning about reloading with o single stage press like this one. Then, if you decide that reloading is a valuable skill and saves you time and money, gives you control over your loads and promotes precision shooting, it is time to step up to a faster and more expensive progressive press which cycles shells automatically, building one complete shell with each pull and release of /fie handle.



Many commercial shells available at your local retailer these days or on line via the Internet are built outside the US. Wolf shells, for example, are built in Spain. While I have found the Wolf clay target loads (h l/8-ounce of #8) to be excellent, the consumer has very little history of these companies to use in evaluating possible purchases. Reloading your own shells gives you much greater control over your shooting.

and even steel have greatly refined the selections in green shooting. Even components such as the humble wad are evolving toward complete biodegradability.

The difficulty with the above scenarios - proliferation on one hand of less expensive shells and, on the other hand, of more diverse loads including non-toxic shot and shell components - is availability. As diverse as the shotshell market now is, can you find the exact load you want exactly when you want it? Unfortunately for shell manufacturers and retailers, the answer is "no," but that leaves a grand reason to reload your own shells.

Muzzleloaders required every shooter to load his own. In those old days, people learned to load from pa and ma and they stuffed their patches, powder and shot right down the barrel from the muzzle to the chamber. Once breechloading guns became available, things changed. Soon shooters could purchase ready-made cartridges that would fit their guns. Muzzleloaders and reloading declined rapidly in popularity.

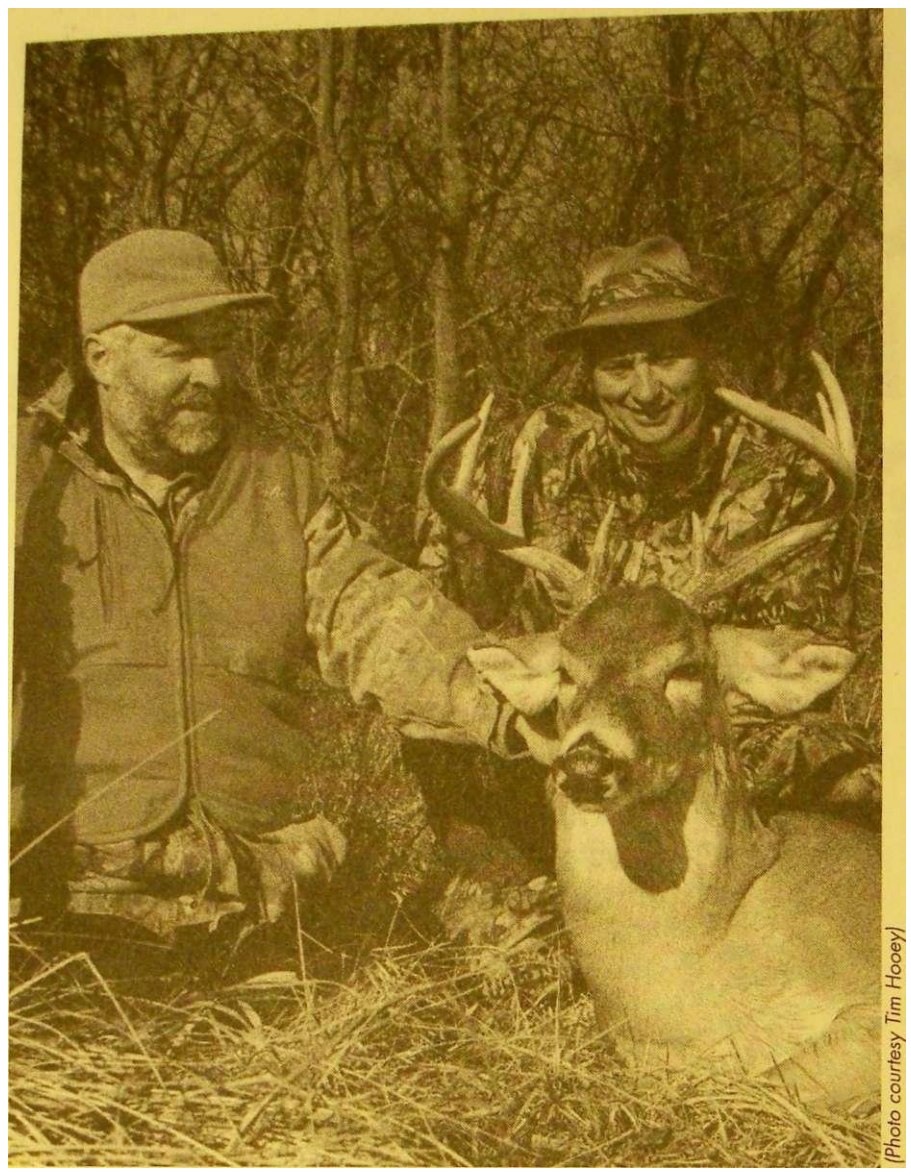
This book does not give reloading data for "primitive weapons." We are ***concerned*** with modern shotguns, the guns you use, expensive or not, to shoot dove or take to the sporting clays course. We are concerned with the guns you may use rather than demonstrating our knowledge of exotic weaponry or the history of hunting and shooting. We are not particularly interested in how the lords and ladies of deeply class-stratified old Europe spent their days in the field. This book is a practical handbook that you can use as a guide to load shells today for shooting at the range or from your duck blind tomorrow.

COST

Many reloaders will tell you that they save money by building and re-building their own shells. Obviously, considering the cost in components and the time and effort, they cannot save money if they are only shooting a few boxes of shells a year. From this perspective, if you do not shoot often, you should probably not bother to reload because you may never recoup the initial investment. For instance, a MEC 600 Jr. Mark 5 single stage reloader is about $120. After that, you can expect to pay about $11 for a bag of 100 Fiocchi 12-gauge 2-3/4-inch hulls and 14 ounces of Hodgdons Clays powder is another $15. A 25-pound bag of #7-1/2, #8 or #9 Olin chilled shot (2 percent antimony) from Ballistic Products is $18 per bag; a bag of 200 G/BP Wads is about $5; a box of Fiocchi 616 primers is $20 per thousand. Add a few knickknacks that your local dealer or a reloading buddy recommend, and you are going to spend a minimum of $200, and that is for absolutely minimal reloading.

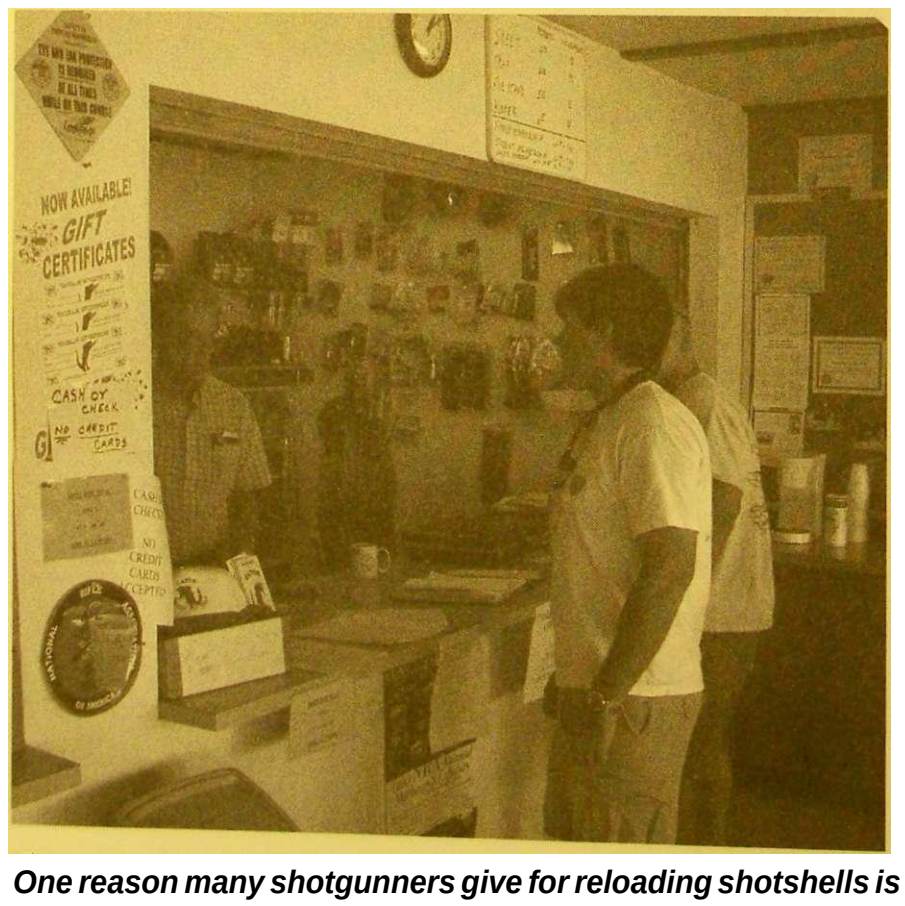
In early November 2004, you could purchase a box of 25 12-gauge 2-3/4-inch Kent Multi-Sport Game & Clay shells for $3.95 from Ballistic Products. For $200, you can buy 50 boxes *(less* shipping) of these Kent shells for the about the same price that you can begin reloading! And how long will it take you to shoot 50 boxes of shells? Economically, the decision to begin reloading may not make sense for you at this time, if ever.

The infrequent shooter would be better off saving his money and either ordering from the internet or picking up a box of shells at his local dealer on his way to the range. Sleuthing through the aisles of a Box-Mart, you may turn up an occasional, miscellaneous $2.95 box of #7-1/2 or #8,



(Photo courtesy Tim Hooey)

When you shoot a muzzleloader, every shot is handloaded. The advent of breechloading guns in the nineteenth century allowed for factory production of complete shells.



One reason many shotgunners give for reloading shotshells is to save money. You can save money by reloading. Perhaps a better reason however is so that you can take personal charge of the loading process. You can customize loads and build shells to suit your gun's mechanical preferences, and for the weather conditions,

often of foreign or unknown manufacture. There will be no telling in advance where it will have been produced or how it will perform. Some brands do not list velocities or give much specific information about components on their boxes.

I have never been certain that low cost is a good reason to buy something, although until I win the lottery, it remains a factor in most of my buying decisions. The saying caveat emptor applies with shotshells just like it does with automobiles or hunting dogs. On the other hand, if you shoot often - and "often" means once or twice a week, I suppose, firing half-a-dozen boxes of shells - you can certainly save money by reloading. You will soon bring the cost of your average load down to $2 or even less as you locate cost-effective vendors for buying raw materials in bulk, re-use your own hulls and perhaps even reload for a couple of friends. All of this amortizes the cost of your gear rapidly, even though most reloaders find that he or she soon buys more complex gear, experiments with more diverse loads, shoots more frequently and perhaps even builds a reloading room off the carport or in the basement.

Practically speaking, the people who shoot often enough to get the best value out of their reloading gear are usually target shooters: trap, skeet and sporting clays enthusiasts. To become good at these games, to consistently break 90 percent or more of thrown clays, often takes years of practice, lessons and continuous shooting. In the process, enthusiasts shove a whole lot of shells into the chamber, a minimum of several boxes every trip to the range. A day of sporting clays shooting can be 100 birds and many shooters like to warm up with a quick, 25-round of 5-Stand or even a game of wobble trap. Outings like this empty six boxes of shells in a hurry, perhaps twice that if the shooter is addicted to multiple gauges!

Personally, I think that the people who enjoy shooting most and who stick with it the longest, making it a lifetime sport, are those who have a diverse range of interests. They are clay shooters and they are hunters, too. Reloading is ideal (for many reasons) for these committed gunners.

Lets be honest. Unless someone has a great deal of time and hunts every game bird at every possible opportunity, from turkey to dove and ducks, with a few trips to the deer woods thrown in with slugs or buckshot, the average legal and ethical hunter will not shoot half-a-dozen boxes of shells a year. Therefore, unless a shotgun hunter is a really lousy shot, the best economic decision is to NOT reload.

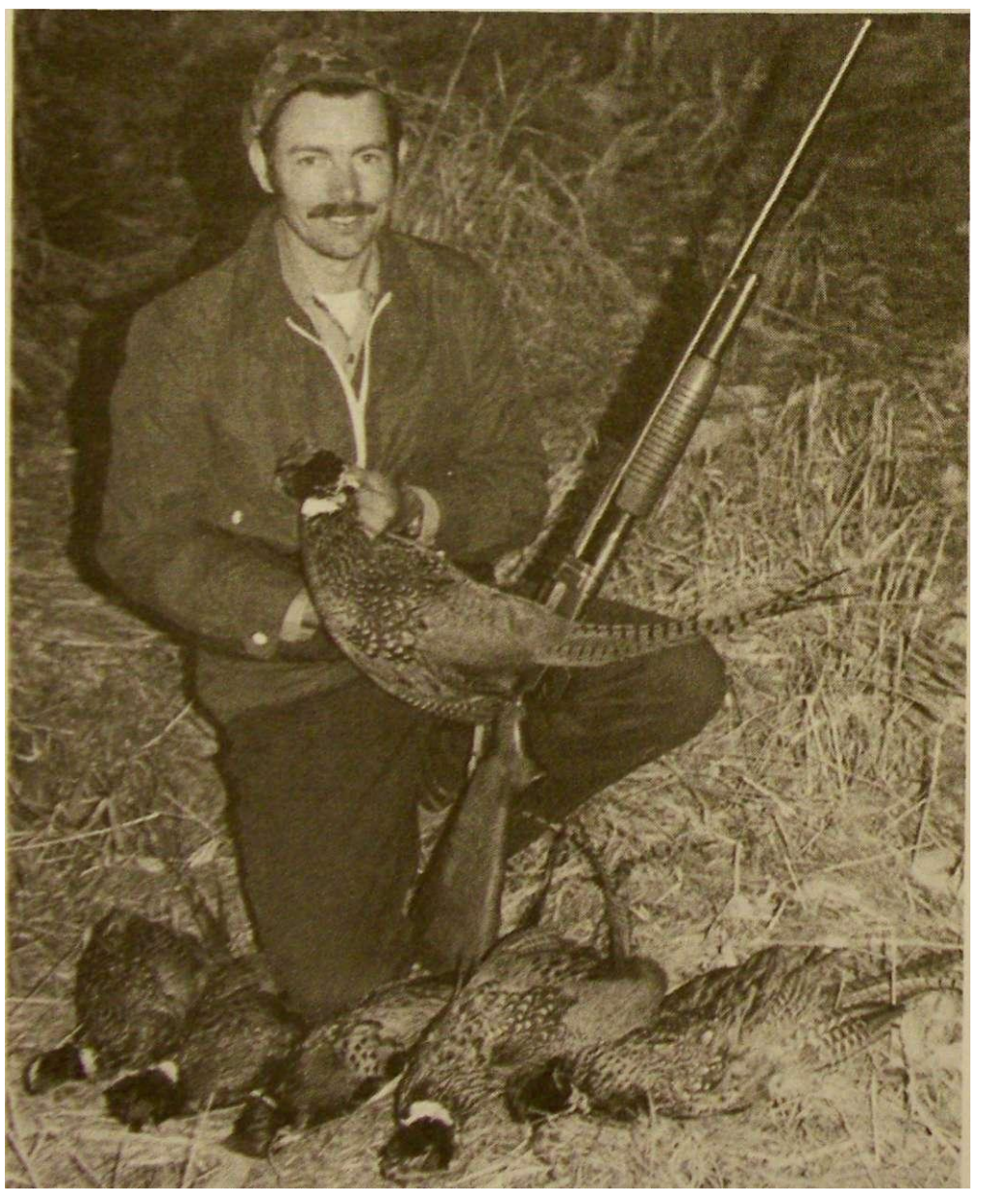
The hunter-only gunner should study game loads, pattern his shotguns, and then buy the very best shells he can find because, by pulling the trigger so few times a year, relatively speaking, he can afford to pay almost any price for a box of

high quality shells. In this case, $18 for a box of 10 magnum buffered 2-3/4-inch Bismuth No-Tox shells is not an economic hardship. You will not shoot enough times during a year to make a recognizable dent in your family budget.

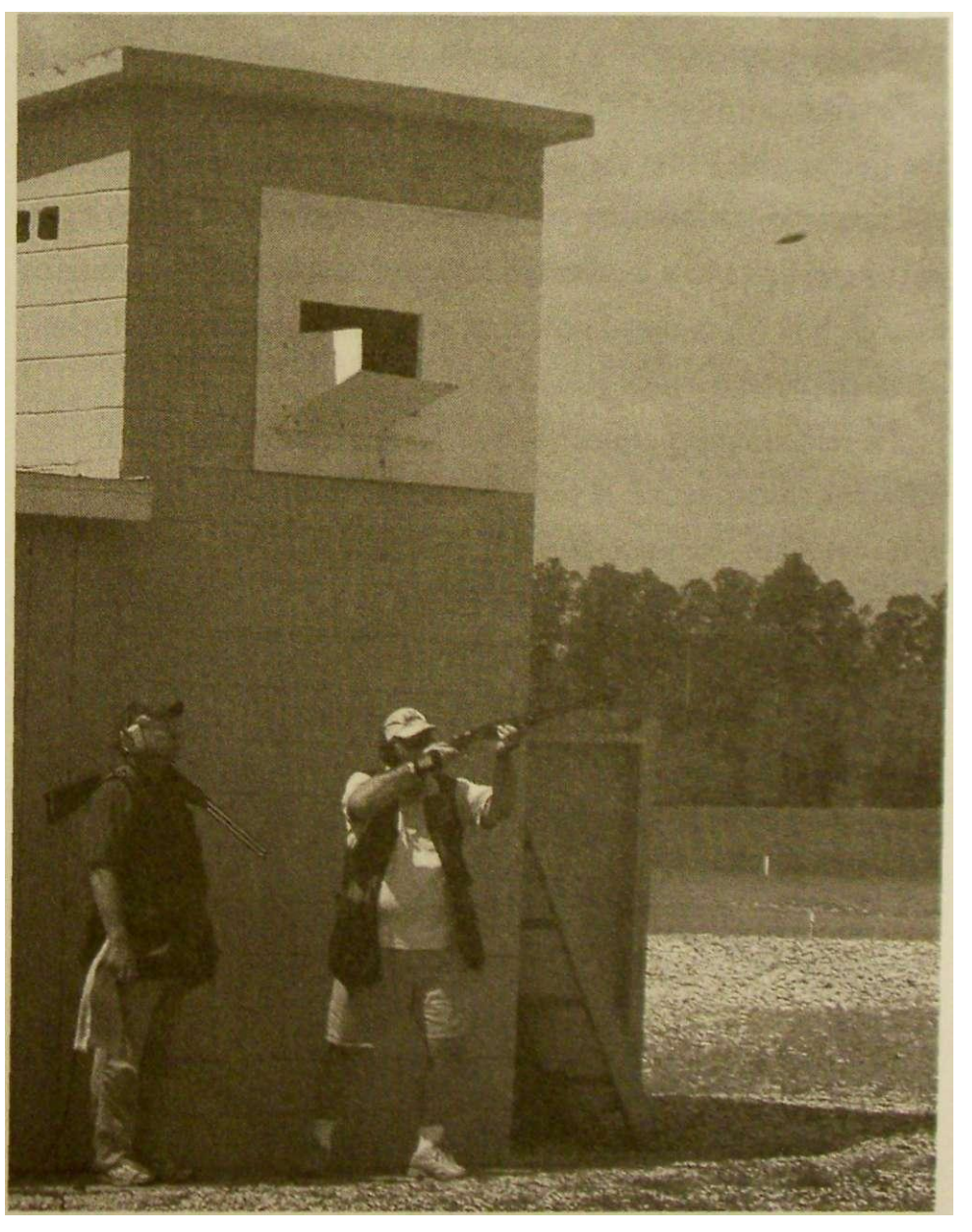
A 12-gauge shotgun is the standard in North America and perhaps around the world as well. There are still plenty of 10 gauges and millions of sub-gauge 16-, 20-, 28- and 410-bore guns in the hands of shooters, though. Folks who shoot sub-gauges - because they enjoy the challenge, prefer the softer recoil, or perhaps because they're training a spouse or youngster usually find that shell costs are higher than for their 12-gauge. For instance, for Winchester AA 2-3/4-inch #9 target loads from CheaperThanDirt.com, 12- and 20-gauge boxes of 25 shells cost $5.51 whereas 25-shell boxes of 28-gauge and 410 bore are $6.53. That's a difference of $1.02 per box or 4<t a shell. Shoot the day of sporting clays with a practice event that we mentioned earlier and the difference per gun can be as much as $6.12. Depending upon how much you and your family shoot, this difference can quickly become significant and can be an influential factor in deciding whether to reload.

Even though you would logically think that bigger shells containing more powder and more shot would cost more, this is not the case. Does a bikini cost more than a one-piece bathing suit, even though it requires far less cloth? All things being equal (same manufacturer and similar quality of cloth and production methods), the bikini costs more. The laws of supply and demand inform us that because many more 12-gauge shells are purchased than sub-gauge shells, manufacturers gear up their primary production for the 12-gauge. Although sub-gauge shells are not necessarily be an afterthought - they are still commercially important - they will be secondary on the assembly line and sold in smaller volume. Hence, sub-gauge shells cost more.

As far as savings are concerned, you can reasonably argue that reloading shells saves time and effort. Consider going to the store for a $10 box of Federal #4 turkey loads. Depending on your home set-up and reloading accessories, you may be able to punch out half-a-dozen turkey shells and then re-set the bar for your #7-1/2 or #8 league trap loads in 10 minutes. That's convenience!



Since his retirement as an official of the US Fish & Wildlife Service, biologist Don Friberg has had more time to hunt For cornfield shooting where long shots are customary, #5 shot makes a good knock-down load. For hunting with dogs in open grassland, 06 is fine and if your dog hunts dose, perhaps even #7-1/2.



Clay target shooters have a reputation for shooting many more shells than hunters. On a good day of deer hunting you may shoot one or two times. A dove hunter could use two boxes of shells to take his limit if there is a breeze. A sporting clays shooter, however, will burn up five boxes of shells on a normal day!

CONTROL, CONVENIENCE AND EXPERIMENTATION

I believe that a much better reason to reload than making a decision solely on the cost of a box of shells is that manufacturing your own gives you greater control over your shooting. If you are a careful reloader - and you should not approach a reloading press in any other manner - you can produce loads that are completely consistent from one shell to another. Consistency is important to groove your shooting and to give you the confidence that when you pull the trigger, you know exactly where your shot will go (how it will pattern) and how quickly it will arrive where you have pointed it.

Once you identify your needs and shooting interests, you can easily program your reloading gear to produce the exact shells you need. Reloading gives you both consistency and versatility. It is quick and easy to make changes and to build, for instance, a dozen shells to experiment with a new load recipe or put together a dozen shells for an unexpected afternoon of pheasant hunting where a limit of birds is two. If you are shooting a course of sporting clays and find it irritating to change screw-in chokes between stations, you can load up different batches of #7-1/2, #8, #8-1/2 and even #9s. Knowing the course, you know the diversity of clay presentations you will face and can load accordingly. Reloaders do not have to get in the car, drive to a local retailer, stand in line and then buy a whole box when they know they may only need a half-dozen shells to pattern a new gun or load.

The reloading experience allows you to experiment with different components. If you have never shot some of the spreader wads, for example, it should be easy to buy a small batch from an internet site or a friend or your local dealer and load a half-a-dozen shells. It should be interesting to see how they pattern with an eye to those fall days of woodcock hunting. When you begin reloading, your shooting opportunities bring whole new horizons.

Working at the reloading bench will introduce its own hazards into your life, so always wear a good pair of impact-resistant safety glasses in case a primer should explode or some other accident occur*

(Photo courtesy Boyt Harness)

Everyone who shoots experiences recoil. The first place to begin taming the recoil of a shotgun is probably a good-quality shooting vest with a padded shoulder patch. Relatively inexpensive, the vest is virtually mandatory for carrying extra shells and utility items for a day of shooting.

Some shooting sports writers make a big deal about every shotgun being unique. Oh yeah? Take your 12-gauge Remington 1100 Sporting 12 gas gun with a 28-inch barrel and full choke. Unless you have modified it, unless it is damaged or has become excessively dirty, the difference between the way it shoots and patterns and the way any other current model 12-gauge Remington 1100 Sporting 12 gas gun with a 28-inch barrel and full choke shoots and patterns will be negligible. Where meaningful differences arise is with similar shotguns with different chokes or different length barrels or, of course, with different gauges. Then time at the patterning board will teach you about your specific gun and the loads it shoots best.

Having a reloading station at home can help you overcome the recoil dilemma, too. Recoil is a serious issue among shotgunners, from professionals to novices. All shooters, regardless of their weapon, are sensitive to and are eventually affected by recoil. It is only a matter of time before you must deal with it because recoil causes flinching, sometimes called "target panic," and flinching causes you to miss what you are shooting at, whether it is a clay disk or a grouse thundering out of the quakies.

Recoil is a special problem for shooters whose body types are not heavy and muscular. Recoil is punishing. You can remove your conscious mind from the physical effects of a shot if you try, but your body remembers ... and compensates. Older

shooters and many younger shooters, especially those with slender physiques, are especially sensitive to recoil. A padded vest, a thick buttstock, a cushioned comb and perhaps even shooting with gloves will help.

Reloading can help tame recoil and blast by letting you find shell recipes that will accomplish your objectives with lighter or different types of loads. Many shotgunners discover that lighter loads accomplish the same killing results on birds or days as the standard heavy loads, and that lighter loads punish their body less. As a build-your-own specialist, you can create literally dozens of loads, experimenting with different primer, powder and wad types, and different weights (and sizes) of shot, from powerful **1**-3/**4**-ounce loads down to the relatively small (for the 12-gauge) 7/8-ounce. Reloading gives you the opportunity to experiment with a few shells in many sizes, rather than searching for a complete box of any one particular load recipe. You can try before you buy!

Here is the commercial way to accomplish that same result. Estate Cartridge (by Federal) produces a Super Sport Target (SS12XH) 12-gauge, 2-3/4-inch shell with 1-1/8-ounce of "extra-hard" #7-1/2, #8 or #9 shot. With what Estate calls its "max" dram equivalent of powder, firing this relatively standard shell will almost certainly give your shoulder a very solid, although not damaging, blow when you pull the trigger. After a box or two, you are increasingly going to notice that bump.

But shotshell manufacturers like Estate have become increasingly aware that gunners require relief from blast and recoil- Consequently, Estate offers a comparable shell in a Competition Target and Flyer - Mighty Light Load (ML12). This recipe uses the same 2-3/4-inch shell and achieves the same 1,250 fps shot velocity with only 7/8-ounce of "magnum" shot, a full quarter-ounce reduction, and a reduction in powder charge. This lighter load is going to prove much easier on your ears and your shoulder. Because you will anticipate and flinch less, you will score more. It is a fact.

Reloading lets you make this kind of reduction on your own. By letting you fiddle and tinker with components, you can find just the right recipe for the task at hand.

THE INTANGIBLES

Reloading shotshells puts you in touch with an exotic hobby and thousands of others who share it. For some practitioners, reloading is merely a means to an end, only the simple act of creating shootable shells.

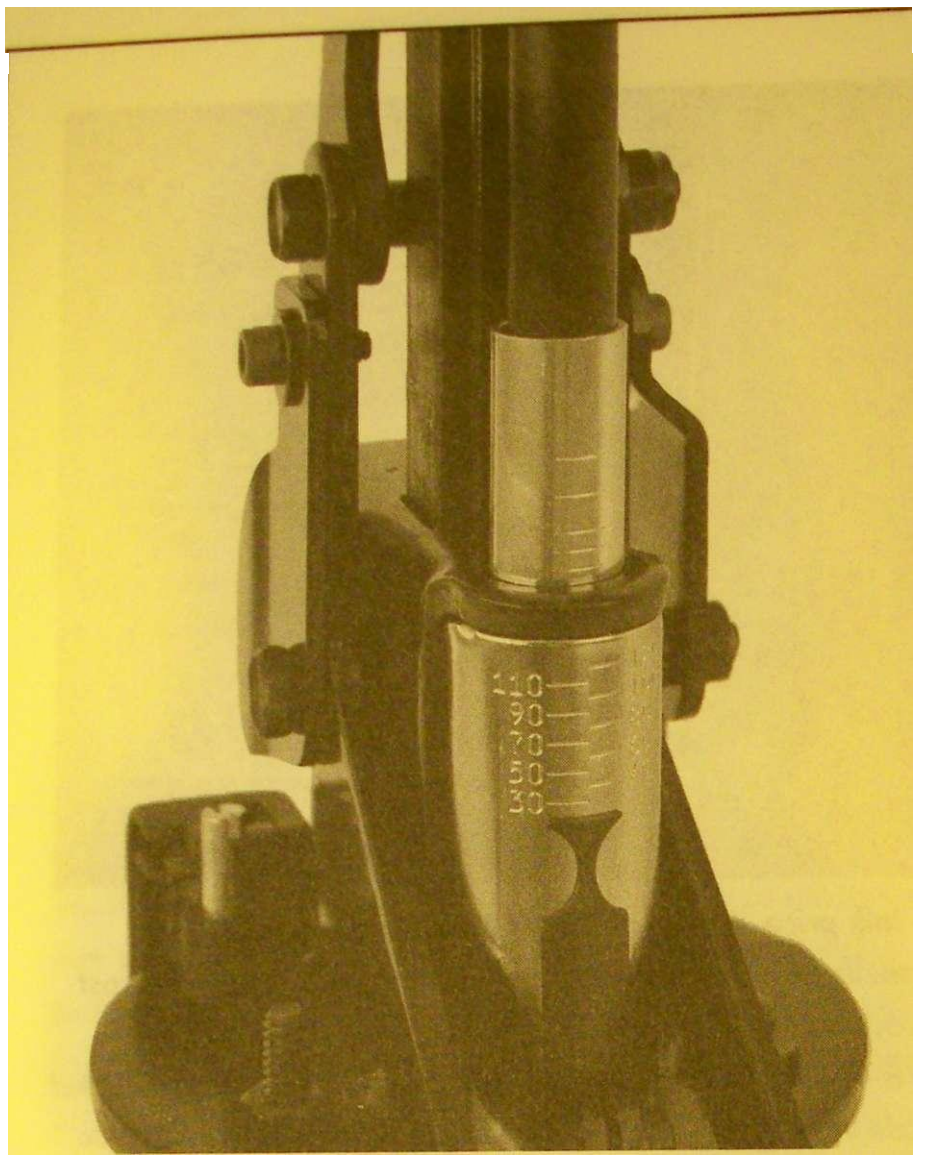
For others, reloading (and patterning) become a quiet passion. It deepens their interest in all facets of shotgunning; involves them in a wider community of shared interest; and

Let's talk price. A case of Target Load Sporting 71532 Rio shotshells from www.ableammo.com for Christmas 2004 cost $38.60. These 12-gauge, 2-3/4-inch shells are filled with 1- 1/8-ounce of #7-1/2 or #8. Your choice, of course. The rated muzzle velocity is 1,200 fps. Adding a 3 percent handling fee makes the cost $39.76. (If you live in Texas, add 8 percent sales tax.) A case weighs 25 pounds and, from Huntsville, Texas, to Gainesville, Fla., where I live, the UPS Ground shipping charge is $9.67. Total charge is $49.43 per case or $4.94 per box of 25 or 19.77 < per shot. These are good shells, but even a casual reloader can cut this cost in half.

promotes an understanding of and ability to negotiate an interesting and unusual technical field. The path to reloading shotshells becomes a path of deepening commitment to shooting, like archers cresting arrows. Hunters find themselves shooting a little trap and skeet, while sporting clays enthusiasts begin tinkering with and patterning turkey loads ... just for fun of *course* ... they have not bought a license ... yet!

Some writers suggest that reloading gives you a sense of craftsmanship. For hunters, this may not be as important an idea to grasp as for clay shooters. After all, unless you are wealthy enough to hire guides and hunt at lodges or "plantations* where someone else does the real work, successful hunting is a do-it-yourself operation.

For clay competitors, however, a sense of mastery means - in simplest terms - learning to lead a flying target. Nothing about your tools, the shotgun or your shooting accessories (vest or cap or safety glasses, for instance) gives you a sense of personal investment and involvement beyond pulling the trigger (unless perhaps you build your own shooting cart)* **I** would argue that craftsmanship is a thing of the hands that separates humankind from all other creatures, and that reloading for clay shooters allows one to enter that realm.

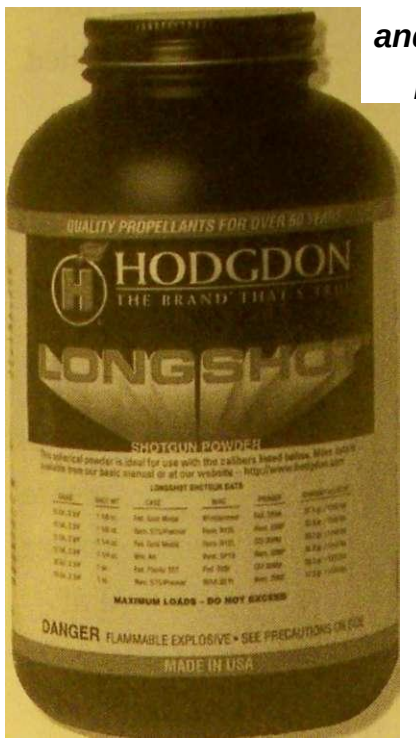


Close-up of the MEC adjustable rammer tube on 9000-series reloaders. The gradations help you apply specific amounts of force to a load. When you begin reloading, you will learn a new technology and add the virtually lost element of individual craftsmanship to your shooting resume.

Some writers have suggested that reloading gives you an advantage, allows you to "do better" in the field, perhaps because you can precisely tailor your set-up to the situation. In a general sense, I support this concept, but do not believe that it is true in any specific sense of killing a sharp-tail grouse or making any specific sporting shot. There is no study that suggests that reloaders are better hunters or competitors than individuals who are well supported by commercial loads. The proliferation of commercial loads today matches the ability of reloaders to create their own loads, but as I have suggested, finding those commercial loads when you need them and in the quantities you want at the time is the challenge.

SAFETY AND OTHER CONSIDERATIONS

There is no question that reloading involves some dangers and requires more than a passing nod at keeping yourself and your family safe. Nevertheless, reloading is an activity that can involve other members of the family and there is no age or size limit to loading shotshells. Any person who is large enough to control a gun and capable of shooting or hunting can load successfully with supervision.



Use Hodgdon's Longshotfor 12; 20* and 28-gauge target loads, and for heavy field use (not recommended for the 410, however). Hodgdon reports mat Longshot is "the most versatile heavy field propellant Hodgdon has ever produced.. .Inaddition, Longshot is the best choice for those competitors shooting race games such as Buddy shoots and Annie Oakleys at their home trap and skeet clubs." Expect magnum velocities with superb patterns.

The big, obvious, classic reloading mistake is misreading or misapplying load data. In an extreme case, such a mistake can kill you or someone standing nearby when the pressures ignited in the chamber are too great for your gun's barrel. I have never personally seen anything like this, but I do believe that it is possible.

KNOW YOUR GUN

You can reload for any shotgun and any gauge, but while there is an obvious difference in over/unders and gas-operated semi-autos, one of the hidden differences involves reloaded shells. Compared to a semi-auto that bleeds off some propellant gases, using them to cycle the mechanical action, an over/under or side-by-side is a relatively simple mechanical instrument. You pull the trigger and everything goes out the muzzle or is ejected when the action is broken over. You can shoot practically any shell through an over/under that the chamber will hold, and you know immediately if it will not for some reason fit in the chamber because you load each individual shell by hand.

A semi-auto can be much more deceitful, however, because after the first shell, subsequent shells are automatically loaded into a tubular magazine while the expended shell is mechanically ejected. The gun, in a sense, does all the thinking and is responsible for follow-through. Shells may fit in the magazine, but not in the chamber. This is especially true for hulls that have been fired more than a few times, although it is the first job of your reloading press to properly resize the hull. The brass can deform slightly and any irregularity may prevent a shell from cycling properly in your gas gun. It is something to be aware of, and it should inspire you to use only clean and undamaged components, but it's not something that should prevent you from reloading.

Safety Notes and Tips

- Never leave powder where children have access to it* A locked and inaccessible cabinet or a safe for powder storage is always an excellent idea.
- Always wear safety glasses or goggles when reloading.
- Powders contain nitroglycerin. Therefore inhalation, ingestion or skin contact may cause severe headaches, nausea and a drop in blood pressure. In case of ingestion or inhalation, call a doctor immediately. Avoid contamination of food and beverages. Wash thoroughly after handling and do not carry powder in your clothing.
- Do not smoke, use spark-producing tools or work near an open fire such as a fireplace or a lantern when reloading. Smokeless powder is an explosive material and highly flammable. It should always be stored and handled in such a way to avoid impact, sparks, flame, friction and heat. You must have a fire extinguisher available and make sure your family knows how to telephone the local fire department.
- Pour only the amount of powder needed for your immediate work.
- Clean up any spilled powders with a brush and dustpan immediately. Do not use a vacuum cleaner, which can ignite powder through sparking.
- Check the powder measure each time it is used. Make sure the settings have not been accidentally changed. Check the weight of 'thrown charges" often.
- Store powder only in its original container, not in old mayonnaise jars or empty milk cartons, for instance. Do not repackage powder. The original manufacturer s container may look nondescript, but it was specially designed for storing powder. When you are ready to discard the carton or package, make certain that it is empty and dean; never use it for any other purpose.
- Never use lead shot with steel shot or other non-toxic shot data, or smokeless powders for black powder or black powder substitutes, or vice versa. Lead and steel pellets have drastically different ballistic properties and to mistakenly use one for the other can cause serious property damage and personal injury.
- Never mix types of powder, regardless of type, brand, style or source,
- Never use one powder manufacturer's data to load shells with another's powder, even if a description of the powder you are using says that it is "similar *to"* another's powder. Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed mmimums.
- Discharging firearms in poorly ventilated areas, cleaning firearms, or handling ammunition may result in exposure to lead, an element known to cause birth defects, reproductive harm and other serious injuries- Have adequate ventilation at all times. Wash hands and face thoroughly after handling lead and before coming in contact with food, chewing materials and smoking materials.
- Find a place and time where you can focus on loading. Building safe and consistent loads requires your total attention.
- Most companies suggest that establishing a reloading routine at the bench will result in the uniform shells and minimize the chance of loading errors*, Remember these two important elements to successful reloading:
- All primers are not equally powerful. Some produce more gas at a higher temperature. Use only the primers specified for a particular load.
- Shotshell wads differ in their sealing ability. Use only the wads specified for a particular load.
- Measure twice, cut once. We have done everything possible to ensure that the load "recipes" in this book are precise. Nevertheless, it is always a good idea to have multiple data sources available and the authors and publishers recommend checking each load carefully before loading and firing.

Load recipes must be followed completely and precisely, but because neither I nor K-P Books can control how the data in this book is used, we specifically disavow any responsibility for any of the data contained herein.

Chapter 2

SHOTSHELL COMPONENTS

All types of shotshells are essentially the same, and all are very different, in the same way that all cars are the same, but none are identical. Shells have the same basic elements and those elements have basic functions. Nevertheless, there is a practically endless combination of these elements and reloading just one of every possible combination would be a lifetime of work.

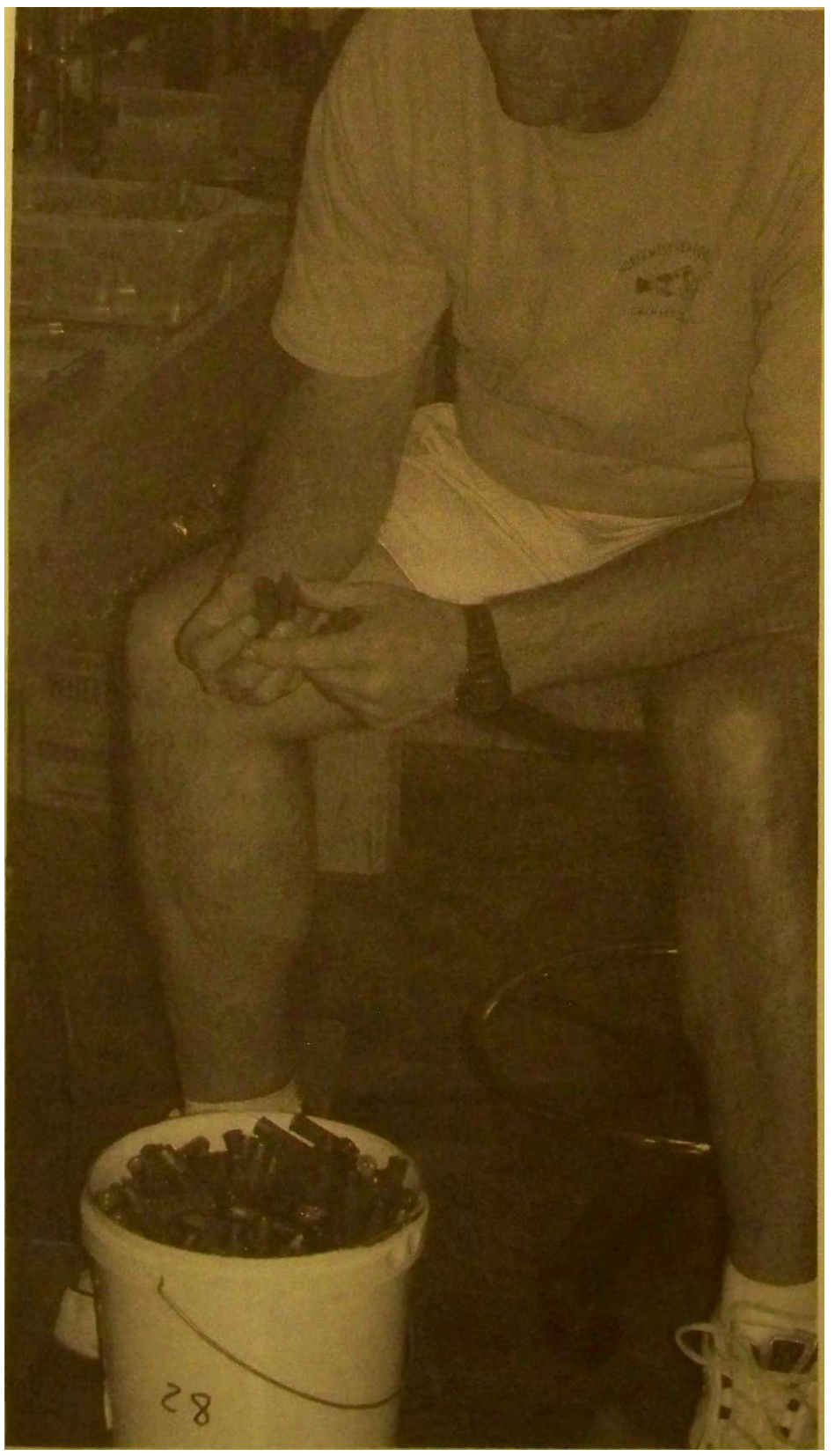
Besides the tools needed to put them together, you need five essential ingredients to build a shotshell and we will discuss three of them - hull, primer and wad - in this chapter. (The shot and the powder, or propellant, will be discussed separately.) A shell consists of:

- a hull or case, which acts as a container;
- a primer in the base of the hull, which the hammer strikes and causes to explode, thereby igniting the powder burn;
- a small volume of powder that burns rapidly and turns to a large volume of hot gas to push the shot through the barrel;
- a wad and/or shotcup to hold your pellets and protect them from the powder burn;
- and shot to fill the cup and shell.

In addition, a specific load may or may not have additional internal spacers to help fill the hull and balance the load.

One of the important factors of handloading is that because these elements, at first glance, seem so similar, you must study them carefully. Small differences definitely exist and both manufacturers and other reloaders testify to this fact. Keeping your reloading components separate, labeled and identifiable is a matter of preservation of life and limb.

Experienced handloaders recommend that once you find recipes that suit your shooting, stick with known components. Otherwise, there is a significant chance of confusing the materials, and in handloading that can cause a drop in performance and very unfortunate results.



Cheek every hull before setting it in the resizing collar of your reloader. Scott Richardson inspects a bucket of .410-bore hulls before selecting those that are good enough to be shot once again*

THE SHOTSHELL HULL

The hull's duty seems obvious, but in fact the hull has quite a few functions and all of them must perform precisely as designed to deliver quality shooting.

Certainly, the primary function of the hull is to package the powder and shell in a neat, sweet and complete unit. Since relatively few shotgunners are black powder enthusiasts, most of us just want to shove a shell inside the chamber, or in the magazine of our semi-automatic, and pull the trigger. We do not want to assume that the shell is anything other than okay. Period. When we are in the field or at the range, we want to pull the trigger, a lot, and worrying about rain or spilling powder and shot and waiting while the smoke clears and our buddies pour and ram does not sound like a real good day. Today's shell provides convenience, safety and, with a few exceptions, the ability to recycle.

All wads are not the same. Certainly, they vary by gauge, but they also vary by load A WAA wad is different than a Windjammer is different than a BP* 575. *Until you have a lot of experience reloading, follow your recipe precisely and even then, switch components with extreme caution.*

You can easily measure the precision of hulls and reloaded shells with a shotshell checker Precision machined holes, labeled GO and NO GO, in this stainless MEC plate test for size and roundness.*

All hulls are not alike. In the discount marts, you will find numerous boxes of low priced shells, often called promotional loads. These lead-filled shells are excellent for one-time use, but should not be considered seriously for reloading - okay, maybe once or twice, but with caution! There has to be a reason these shells **are cheap. First, they are usually constructed with paper inserts inside at the base of the hull, and these inserts will soon detach and they can lodge in the gun barrel. Anything lodged inside your barrel is going to be a problem. Moreover, although over/under and side-by-side shooters secretly think of themselves as a notch above gas gunners, it is still the rare double barrel operator who conscientiously checks his or her barrels before inserting another two rounds and snapping the breech** shut.

Hulls evolved significantly during the last century. Originally, the self-contained shotshell hull was brass from top to bottom. All-brass shells were cumbersome and expensive, however, and except for the base (sometimes called the head), paper rather quickly replaced the all-brass hull. A rigid brass base was retained to seat the base wad, hold the primer, contain the shaped paper hull and to provide a solid grip for the gun's extractor* after firing.

During the '60s, a remarkable development in shotshells took place, the introduction of plastic cases. Today, almost all cases are plastic, which is much easier and less expensive to form into a shotshell case than paper. Plastic hulls offer greater water resistance than paper and they truly are more pliable. The synthetic material also maintains a superior memory for crimps without the fraying associated with the edges of layered paper hulls. Plastic used for hulls is more resistant to heat than paper hulls, too, and is stronger for the amount of material required.

Nevertheless, there is considerable pressure from outside the industry to shoot biodegradable components. (In my hometown in Florida, a city known for its liberal politics, the new "Gainesville Target Range" requires that shotgunners pick up not only their hulls, but their wads as well.) This trend may eventually mean that our ballistics tables include data on tomato skin shotshells and distinguish between Red Delicious apple seed pellets (#6) and Autumn Gold pumpkin seed pellets (#00 buckshot).

Manufacturers are developing more eco-friendly products and you will increasingly find them available as reload components. Kent/Gamebore

*Proper shell resizing is important with today's close gun tolerances. The Super Sizer from MEC is a heavy-duty shell' sizer that is built-in to all new generation MEC presses**

recently developed a "photodegradable" wad, for instance; it is still plastic, but it incorporates properties that cause "accelerated breakdown." Their Gamebore line has a 2-3/4-inch biodegradable varnished paper shell and a fiber shotcup. Kent's Impact *non*toxic shot is* a tungsten matrix, which Kent says, flies "just like lead, *only* it is non-toxic." This movement may, sooner or later, affect handloading in a giant way (It changed home photo developing enormously. Chemicals we used to simply pour down the drain are now known to be highly toxic!), but for the present, many options are available in plastic wads and shotshells.

At the base of the shell is the brass cup that stabilizes the hull and other components. Curiously, this "brass" cup is often not brass at all, but a lightweight steel alloy that is colored to look like brass.

Shotgunners obviously prefer that their shell bases look like brass, though. Why this is so would involve some cultural analysis, but a few years ago, the now-defunct shotshell manufacturer Activ tried aggressively to market a no-brass plastic case. This case was entirely functional and suitable for reloading as well. It incorporated a small metal ring molded into the base to grip the primer. Nevertheless, sales results were not pretty. Perhaps Activ s hulls were perceived to be as not as strong as shells with visible metal bases, but from all reports, they were, and they did not require resizing in a reloading press, either.

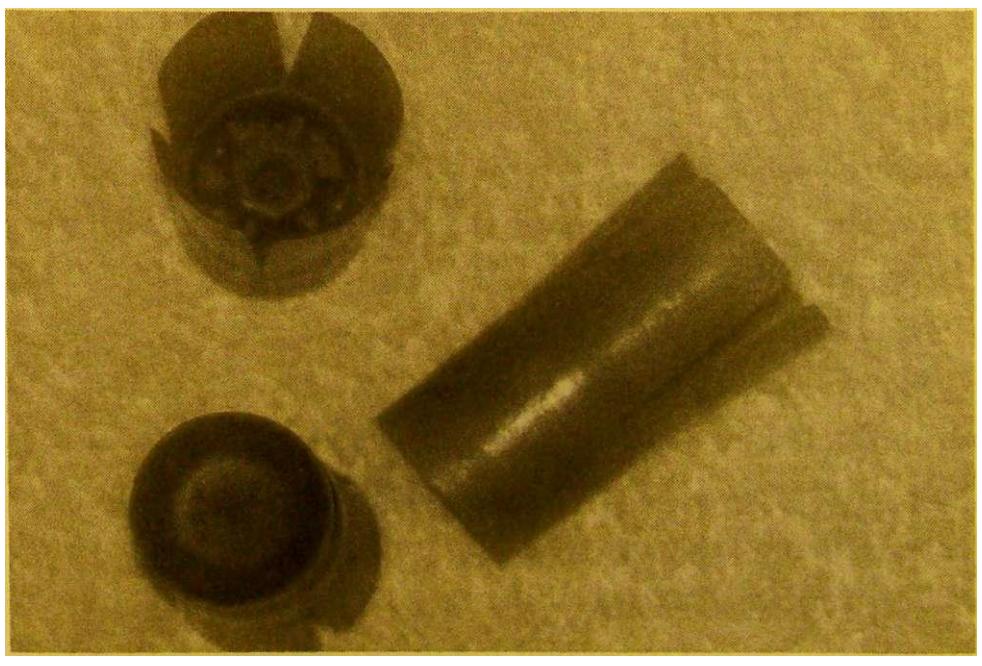
When I bought my first shotgun, about 25 years ago, I learned that there were two kinds of shells, high base and low base. This referred to the height of the brass base. It was generally understood that low base equated with low power and high base with high power. Consequently, my buddies and I purchased high base shells for pheasants and waterfowl, and low base for grouse and woodcock. What a surprise it was to learn that there is no essential relationship between the height of the base and the power of the load! But myths die hard, so today we still have high-brass magnum loads and low-brass dove loads.

The metal visible up the side of the hull is designed to stiffen the shell, to give the extractors a firm shelf to grip and, especially with paper hulls, to provide a firm base of support for the load s components. During the first half of the twentieth century, the size of the brass on a shell varied as manufacturers experimented with new paper and plastic hulls, new base wad materials and heights, new progressive powders and various configurations for consolidating the elements of particular loads. A sneaky difficulty with new hull materials was finding combinations that would best contain gas pressure from the burning powder without leakage around the seal or the base wad.

Today s hull makers vary the height of the brass for the same reason that they use differently colored hulls. Different sizes help them and their customers distinguish between different *types* and sizes of shells in their line.

A sturdier hull base, one wrapped in metal, albeit lightweight

The height of the brass base** on **a shotshell is not an indicator of its contents or power. A high base shell does not necessarily contain a heavier load or greater charge of powder than a low base shell.



Ray "Hap" fling, a former Ail American Trap shooter from Ohio who now lives in Gainesville, Florida occasionally shot trap with the inventor of the plastic wad/shotcup in the '50s. The original, red plastic wad is marked "Pat. Pend." on the powder side. On the shot side, it has an interior, six-pointed star-shaped structure, perhaps to help offset the shock of setback on lead pellets. The 12-gauge wad has four petals and measures h 1/2 inches long.

and relatively soft as metals go, may have advantages when shot through gas-guns and pump-actions which tend to extract shells with greater force than over/unders or side-by-sides. For gas and pump guns, you need a shell rim to be made of a reasonably strong material and firmly attached.

There are two fundamental designs of plastic hull in use today: a two-piece, straight-sided hull and a one-piece, injection-molded, compression-formed hull. The straight hull has a removable base wad of paper or plastic that separates the powder from the metal of the base. This shell is typically the thinner of the two designs and is frequently the hull of choice for building powerful htm ting loads where every micro-millimeter is packed with powder and shot. PMC offers a straight-wall hull in its HP Competition load, however. These high-end target shells have a six-star fold and the hard shot contains 5-percent antimony.

The injection-molded or compression-formed hull uses an integral base wad, which is the wall itself tapering to the bottom toward the primer hole so that the thickening curvature of the hull itself is what separates the powder from the base metal. Winchester's popular AA hulls are a good example of the more common compression-formed tapered hull. (They show a cut-away of the loaded hull in some of their recent advertising.) Typically, the thicker, injection-molded shells are the choice of hull for competition loads.

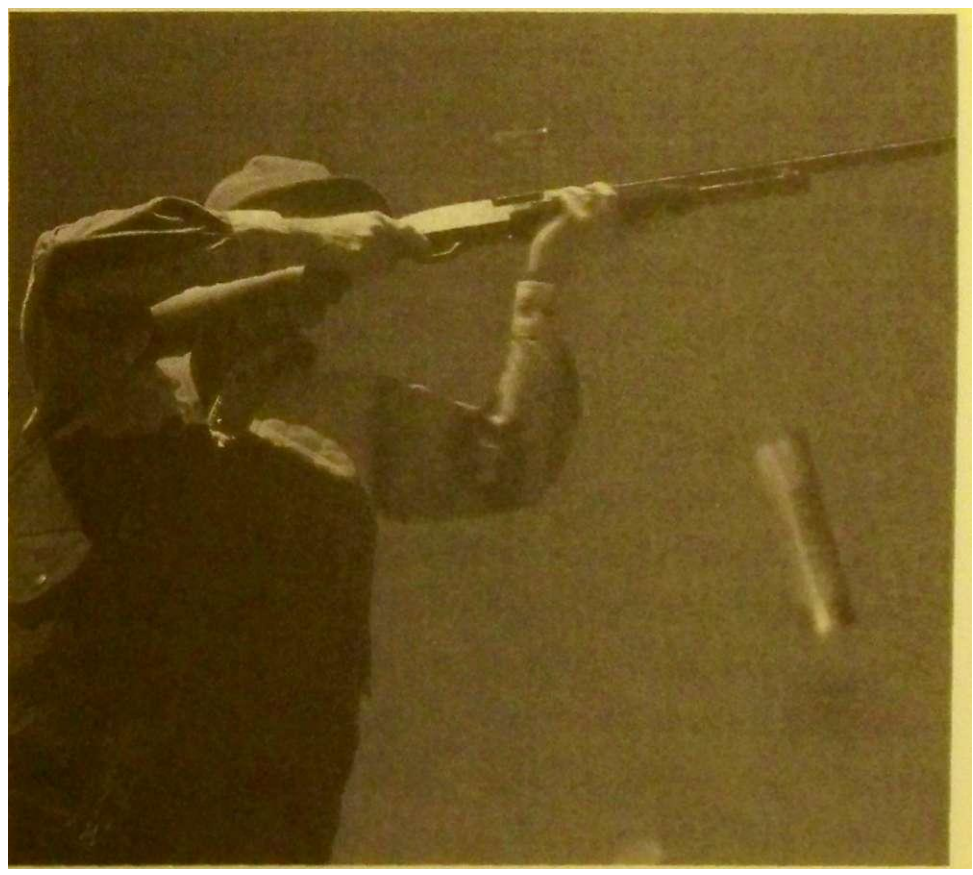
At the base of a straight-sided hull is the interior base wad. It is somewhat rare that this is a loose paper wad as in days past. Subjected to the intense flash of heat when the primer explodes and ignites the powder, a paper base wad can easily detach and fall out, deteriorate or blow into and stick inside the barrel. Reloading a hull without inspecting the fiber (or plastic, r that matter) base for adhesion is careless and unacceptable.

Today, many of these base wads are plastic and look like as hers. Their functions are to separate the powder from the se, to elevate the powder to the top of the primer and to help seal the bottom of the shell. You do not want a gas leak anywhere, but it can be especially disturbing around the base of the hull.

By varying the thickness of the plastic base wad, a huge variety of load combinations is possible without mandating extreme measures in component adjustments. Instead of adjusting component height, ammunition manufacturers logically utilize various thickness base wads to facilitate many different load types. This allows them to get by with few part changes in the hull's construction.

At the opposite end of the hull from the base is the crimp and no matter whether the hull is paper or plastic it needs to be positively crimped. One purpose of the crimp is to seal the

Beautiful, 6-fold factory crimps on Fee/era/ #6 12-gauge and #6 20-gauge shells, and a Wolf #8 12-gauge. You can build crimps just as good looking and, indeed, to be effective you must make this part of the reloading exercise a priority.



On many ranges, the rule is that if a shell hits the ground, it belongs to the range... and you can purchase your own shells from the dub. This ocW rule makes it tough on reloaders who shoot semi-automatics and pump guns, especially pumps like the Ithaca Model 37 High Grade that ejects hot shells straight down from the chamber, rather than out to the right or left side. For clay shooting, a double-barrel over/under with ejectors modified to hand extract shells might be easier on the back and give you cleaner shells to reload.

end of the shell to prevent the shot from falling out and keep dirt from entering. The crimp holds everything in order inside the hull. It also keeps the powder and shot properly packed for that micro-second when the primer ignites the powder and pressure begins to build. The crimp is a patterned fold and it is essential for proper powder ignition and controlling the burn rate. Varying the depth of the crimp or otherwise changing a pre-established fold can quickly and surprisingly affect the pressure.

A few years ago, two types of crimps were common, the roll crimp and the star fold. The roll crimp dates from black powder days. Black powder was bulky, at least compared to today's progressive powders, and it needed all the room it could get inside a shell. Everything was packed in tightly and a small over-shot card (also called a wad) topped off a roll-crimped load. The crimp rolled the hull firmly back on itself and down to the card, thus holding the powder and shot in place.

With the advent of more efficient smokeless powders, less length of hull was needed to contain the powder because less powder volume could accomplish the same or better results than black powder. Therefore, more hull was available for sealing the shell. The over-shot card could be dispensed with and the final quarter-inch of standardized paper or plastic shells was simply folded over toward the middle. Today's final crimp depth is about 1/16-inch with either a six- or an eight-segment fold. Hevi-Shot shells were originally marketed with a roll -crimp, but with Remington's partnership they have since switched to the more conventional eight-fold.

Is there a difference between the six- and eight-segment folds? Except for the number of leaves or folds, no, but it is believed that the eight-segment fold holds a little tighter and is therefore a little better for smaller shot, #7-1/2, #8 and #9 in target and small game loads. There is a tendency for the six-fold to be used with larger shot in hunting and field loads. The small shells used in the 28-gauge and the 410 use a six-fold. Although it seems counter-intuitive, the large shells of a 10-gauge also use a six-fold crimp, perhaps because they are heavy hunting loads.

The memory of a former crimp is not embedded in the plastic of a new hull, so it must develop a memory. Working this hull carefully into the crimp starter of your reloading press several times will introduce folds properly into the material. Often during handloading, you will be tempted to only tap the new hull into the crimp starter and move through this station rapidly. This is the wrong approach because crimp starting is vitally important to effective shooting. Impatient handloaders, after finishing such a load, occasionally discover that the closure in the center of the hull mouth is incomplete and that they have left a hole in the center where the crimp does not meet. Pellets can dribble out and this renders the ugly load functionally useless. This is a result of rushing through the crimping process.

Many experienced reloaders recommend that when you work with a new hull, consider using a six-point fold starter rather than an eight-point if you have a choice. The six-fold is easier to work and usually realigns easier.

INSPECT EVERY HULL

Because hulls are so important to successful shooting, you must inspect them carefully before you begin reloading. Sorting and inspecting hulls while you are sitting at the reloading bench can seem unnecessarily tedious, though: you are perched in front of your machine with your components and the power is on, but before you can load a single hull, you have to check the type, its integrity and cleanliness every time you set one up. Perhaps the best time to sort and inspect is while you are watching television. A golf, baseball or football game on the tube where action is intermittent, gives you the time and opportunity to check each shell. Then, when you sit down at your reloading bench, you can confidently pound out the reloads.

Initial sorting separates gauges and lengths. After that, you can sort for brand and type. Just because you are holding a 12-gauge hull does not mean that you can load it with just any 12-gauge recipe. Seemingly small but ballistically significant differences in hull material, design, capacity and wear affect loads profoundly.

(Photo courtesy The Lost Target)

Only factory loads are approved for competition at the highest levels, such as the FITASC World Championships. (FITASC is the international organization that governs sporting competition.) For utmost shooting consistency, reloaders will want to find a commercial load that is most comparable to the load they are pressing. Of course, if and when you reach the very highest levels of competition, gun and ammo manufacturers will stand in line to sponsor your shooting ... and your reloading press will begin to gather dust.

Winchester advertises that its AA hull will "become the new benchmark of reloadability." In the same ad, the Illinois company suggests that you can achieve at least 15 reloads from a single shell. Fifteen is a lot of reloading. Not only is the hull subjected to violent extremes of heat and pressure, but also the crimp must fold and hold precisely all of those times. One of the biggest problems in reloading is forcing yourself to discard hulls that may not be in the best shape. Winchester AA hulls have an excellent reputation among reloaders.

Nothing is going to work better for you - either in your reloading press or in your shotgun - than perfect shells. Many writers recommend that you begin reloading with a bag of new or even once-fired and pre-sorted shells that can be purchased from your local dealer or via a known internet vendor like Cabela's. Unfortunately, it is well known that most shotshell reloaders use hulls well past their prime and wind up trading performance for economy. No one would consciously choose to make this trade, but we reload in part to make our money and our components last longer than one shot and there is always that push-pull dilemma of getting "just one more shot" from ahull.

Petals on G/BP wads are designed to snap-away from the flying shot after it leaves your muzzle. According to Ballistic Products, this allows the pattern to expand evenly out to the fringes*

Fortunately, hulls occasionally give you easily discoverable clues about their readiness for retirement. Worn-out shells destroy shot-to-shot consistency. As hulls age, patterns and velocities can be affected by pressure fluctuations, so it is crucial that you quickly identify and dispose of flawed hulls. Inspect the base and walls of hulls for cracks and corrosion. Hulls with compromised structures will leak gas and cause the loss of pressure and velocity.

Hulls begin to fatigue with their first loading. Repeated reloading and firing eventually causes the seal between the base of the paper or plastic hull and its brass base, or the seal with the base wad, to deteriorate. In some hull types, the process of base degradation can be rapid and extreme, and therefore more noticeable than in others. Other symptoms of hull fatigue include plastic walls becoming brittle near the top or at the crimp and finally, developing hairline cracks that leak gas. You must toss these hulls immediately.

THE PRIMER

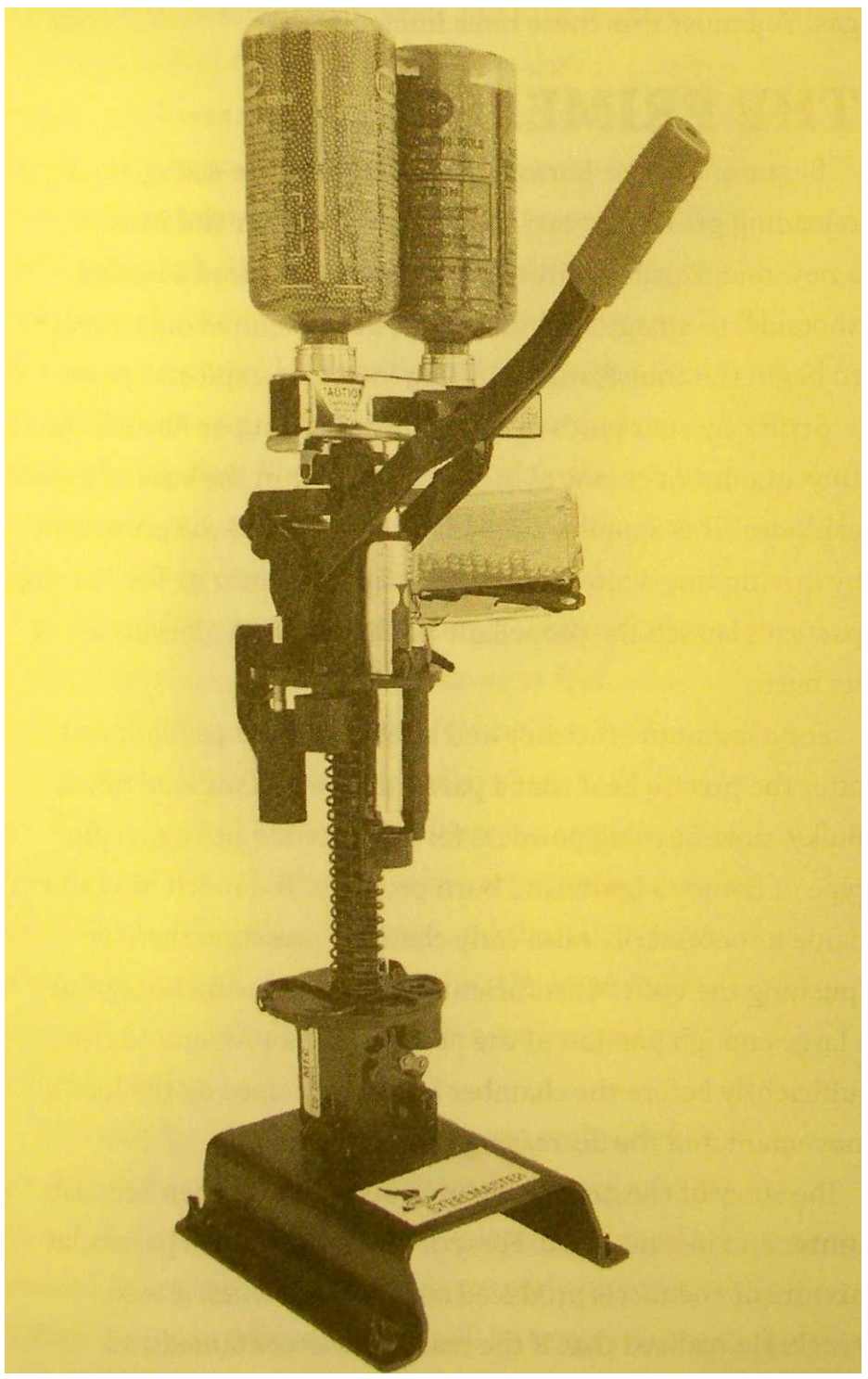
Beginning at the bottom of the hull, after re-sizing, your reloading press next extracts the spent primer and inserts a new one. Former editors of this book compared a loaded shotshell to an automobile engine; both required only a spark to begin the transformation from inertia to explosive power.

Struck by your gun's firing pin, instantly super-heated, the tiny amount of chemical inside the primer in the base of a shell explodes. This supplies sudden, intense heat to the propellant by driving tiny white-hot particles upwards into it. The burning particles launch the propellant on the brief but glorious arc of its burn.

For maximum efficiency and effectiveness, a primer must offer the precise heat that a particular propellant load needs. Bulky, slow-burning powders for instance require a specific type of flame to ignite and burn properly. Too much heat and flame unnecessarily raise early chamber pressure, thereby "pushing the cycle." Insufficient heat and flame do not ignite a large enough portion of the propellant for pressure to rise sufficiently before the chamber is decompressed by the load's movement and the decreasing confinement.

The story of the primer began in about 1807 when Scottish hunter and inventor A. J. Forsyth discovered that a particular mixture of chemicals produced an explosion when it was struck. He realized that if the reaction was contained and channeled, it could be used to ignite powder charges and he eventually used his knowledge to create what was called a "pill lock" ignition system. His was the first step along the way to today's modern primers and the path wound through England and America for more than a hundred years.

Unlike powder which burns very rapidly, the primer is designed to explode. The explosion of the tiny primer showers the powder with hot sparks and causes it to ignite.



MEC says their Steelmaster is the only shotshell reloader that comes specifically equipped to load steel shotshells and the bonus is that it works equally well for lead shot The resize station handles brass or steel in either high or low base. The automatic primer feed is standard.

Early primer components were effective but terribly corrosive. Fulminate of mercury caused brass cases to become brittle. Potassium chlorate left thick deposits like common table salt inside a firearm, making bore cleaning necessary within hours.

Today, the #209 primer is the standard for shotshells, having thoroughly vanquished the slightly smaller Remington #157 about 40 years ago.

Modern ecological consciousness is making its presence felt even with shotshell primers. Lead styphnate, successfully used in primers for years, is non-corrosive, but the fear of non-degradable lead compounds in the environment may eventually eliminate its use, a clear example of change, not for shooting performance, but for its ecological consequence. Winchester now markets a non-toxic "Reduced Hazard Shotshell Primer" which lists, as its explosive ingredient, a 1- to 2-percent by volume chemical called Diazodnitro phenol. Winchester's MSDS or Material Safety Data Sheet (rev. 01/01/04) quaintly notes, "Will explode with mechanical impact or shock." On the other hand, Winchester's MSDS (also 01/01/04) for basic lead styphnate (lead hydroxide styphnate, lead hydroxide 2,4,6 trinitroresorcinate), a more common explosive ingredient in primers today, notes also that it will explode with mechanical impact or shock. However, it also states that basic lead styphnate is a toxic explosive with known environmental dangers, and is known to cause cancer and birth defects.

Like powders, primers have a character that is all their own. Some burn longer and others burn with greater intensity. Some have a longer spark and produce heat over a much longer time - as long as several milliseconds lasts, that is - and this is referred to as the flame's duration. In general, target loads do not need much spark, because the propellants are in the fast-burning, easily ignited category. Hunting loads, however, may require a great deal of primer boost and heat to get slow-burning propellants cooking. On a cold day, the need for tight crimps and warm primers can be critical to avoid sputtering ignition. For these loads, magnum primers were developed, an appellation that seems contrary to their typical application. Magnum primers are especially hot. Generally, however, magnum shotshells derive their power not from hotter primers but heavier shot payloads.

So do not fool yourself into believing that all primers are the same. They are not. Different primers produce varied results and cause distinct reactions as other shotshell components (type of powder, weight of load, shape of the hull) change. Although you would not want to have one explode in your closed fist, as the explosion would cause you permanent damage, by itself, a primer is not a significant pressure

generator. While one type of primer produces minimal pressure in one load, another type might not. The same is true for maximum pressure. Except for this one thing - all arbitrary component-swapping creates new and unpredictable results - you cannot generalize about or substitute with primers. These small explosive elements and the energy they produce are a part of every load's individual ballistic equation. Even if the pressure does not increase or decrease a great deal when you substitute the primer you have on hand rather than finding the primer you need, the balance created by a specific combination of components will suddenly be thrown off balance and the resulting load will be a below-average performer.

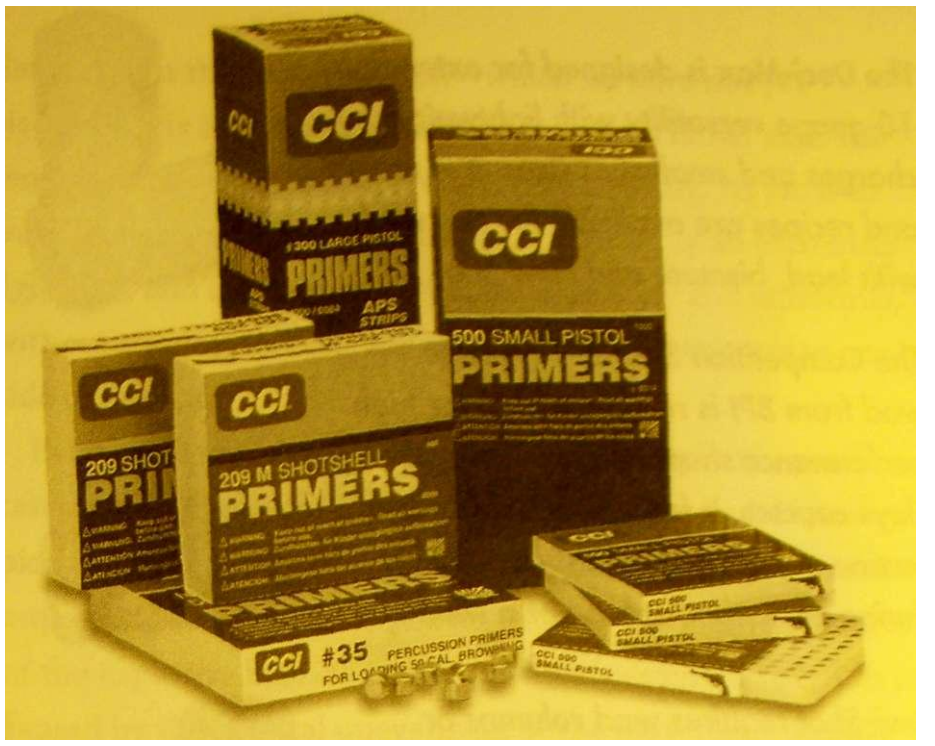
It is relatively easy to crank up the pressure in a load to well over the acceptable and safe prescribed pressure with just a primer swap. From a reloader s point of view, this is the least desirable change. Tests indicate that some common target loads can change by as much as 3,500 psi with only a change of primer.

Here is a minor example from the 10-gauge tables of changing results from simply changing a primer. A quick search through the load data in this book will give you many more such examples. Let us hypothesize that you are using a single stage press to load 1-5/8-ounce lead shells and you have Blue Dot powder and Remington SP10 wads on hand.

Using a CCI209M primer, the recipe calls for 45-grains of Blue Dot for an achievable velocity of 1,285 fps and a maximum chamber pressure of 8,000 psi.

Using a Winchester 209 primer, with the same 45-grain Blue Dot powder load gives you the same shot velocity -1,285 fps - but raises the pressure in the chamber by 10 percent to 8,800 psi.

As of November, 2004 you could expect to pay between $95 and $100 for a case of 5,000 Remington, Winchester or Federal Primers or about $90 for Cheddite primers. On a per shot basis, this is about 2<t or less.



All primers are not the same. Not even all primers designated for shotshells are the same and they can not be interchanged without double checking load formulas. Many primers look alike and if you load multiple gauges, or multiple types of guns, keep your primers strictly separate.

THE WAD/SHOT CUP

Once you drop the powder in a hull, it is time to insert the "wad." Now, a wad is a wad is a wad. Right? Of course, you know that could not be the case. If everything were that easy, we would not need books like this to guide reloading. A wad is

I ssary and curious item in a shotshell. On the one hand, iry simple and on the other hand, it is crucial to good, tent performance,

ve said "it" as ***M*** there is a single wad that every oader now uses, but that is not the case. In fact, during ast 150 years the wad has evolved as much as any other component of a shotshell. One way it has evolved is from paper or thick circlets of felt and cardboard to plastic, and now it is progressing toward special biodegradable materials such as those from Kent/Gamebore mentioned earlier in the chapter. Another way that it has evolved is from a flat disk or several stacked disks to ... well, a pair of opposite facing cups with a springy cushion connecting them. Let s talk about wads.

The wad has two primary functions. It seals the powder from the shot and prevents the burning gas from leaking through the balls of shot or around the sides and thereby diminishing the unitary force of the shove down the barrel. Obviously, it must fit smoothly and with great precision against the sides of the hull, not so tight that it causes undue pressures from the burning powder, but not so loose that it does not completely seal off the gas.

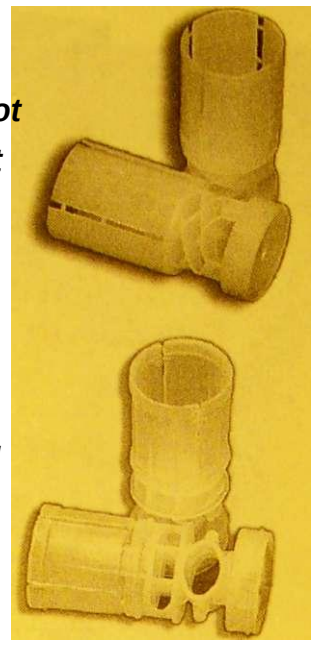
Because the cardboard and felt wad circlets of a hundred years ago have evolved into a much more impressive and functional shotcup, the wad itself has accrued additional functions. By cupping the shot, it prevents significant contact between the accelerating pellets and the smooth steel of the barrel. Although this might leave residue inside the barrel for you to clean out later, lead would not damage the barrel.

Steel shot however has been known to scratch older barrels made from soft, relatively thin steel and to damage barrels with fixed chokes. There is certainly a question about some of the new pellet formulations, such as Federal's tungsten-iron, which are designed to improve upon lead. Some of these products are harder than lead and are actually harder than the steel in the average shotgun barrel.

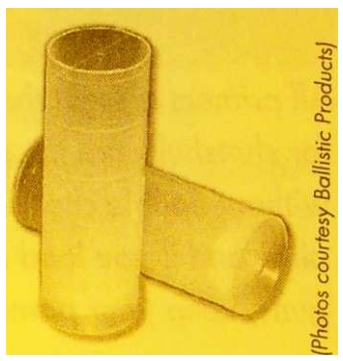
By minimizing contact between your steel barrel and the pellets in a load, the shotcup helps keep the accelerating pellets

The Deci-Max is designed for extending 10-gauge versatility with lightweight shot charges and small shot sizes. It is pre-slit and recipes are available for this wad with lead, bismuth and Hevi-Shot.

The Competition Special 12-gauge wad from BPI is recommended for high performance shooting value on sporting clays courses. It features a double-crush section of "G" ring to cushions pellets during the setback phase of a shot



Hevi-Shot requires wad columns or shotcups specifically designed for loading and shooting Hevi-Shot The TPS W-gauge shotcup series represents a culmination of many convergent technologies.



(Photos courtesy Ballistic Products)

away from the hard barrel. The friction from such contact causes soft pellets to deform; it gives the otherwise relatively round pellets flat spots and these deformed pellets are pattern-wreckers, the so-called "flyers." Thus, one function of a modern century wad or shotcup is to protect the pellets, and that is something a flat cardboard disk from the early 1900s could not do.

Once the shotcup has exited the barrel, it falls away quickly. Most modern wads are designed with petals so that the shotcup opens like a flower, the sides folding quickly backwards. Air resistance causes the shotcup, its petals now open like a parachute, to fall behind the pellets almost instantly. The wad usually falls to the ground within 10 to 15 yards, having completed its mission. (Older or experimental shotcups without petals often fell to the ground with some pellets remaining inside!) Un-slit wads (i.e., those without pre-cut petals) are available, but with the intent that the reloader will slit them to a particular load and pattern preference.

What the old style flat disks could do, however - and what special disks can still do (refer to some of the recipe notes) - was to provide bulk when needed as reload recipes for powder and payload changed. Only one shotcup is used in a load today, but felt or cardboard wads can still be stacked if necessary when shell components change.

In separating the burning powder from the lead shot, the wad or shotcup helps prevent the extreme heat of the burning gas from melting the lead. Lead melts at 621.5 degrees Fahrenheit and boils at 3,164 degrees. According to Mike Daly at Hodgdon, today's smokeless powders generate heat in the range of 2,800 to 3,200 degrees Kelvin. That computes to a range of 4,575 to 5,300 degrees Fahrenheit. That is easily hot enough to melt your lead shot if the temperature is sustained for more than a few seconds, which of course it is not. It is hot enough to fuse some of the pellets if these hot gases slip around the wad and decide to mingle. Imagine the havoc this will wreak with your carefully constructed shot pattern. Disastrous!

Curiously, reports on Hevi-Shot from Environ-Metal and Remington, show quite a bit of pellet deformation before a load is shot and this has not seemed to disrupt the patterns profoundly. Hevi-Shot is a blend of tungsten, nickel and iron that is actually heavier than lead - and still eco-friendly. This commentary should not be construed as a commercial for Hevi-Shot, only a report about characteristics that appear to differ from the normative expectation, but hunters and load testers alike attest to the lethality of this brand and composition. On the other hand, Kent/Gamebore notes that their Impact brand eco-friendly tungsten-matrix shot is not formulated to improve on lead. Thus, it is not harder than the steel in the typical shotgun barrel and does not require thick, protective plastic shotcups. Kent says its tungsten loads are just fine for fixed-choke guns as well as for sub gauges and guns with screw-in chokes and that these loads have the same "clean killing ballistic properties of lead."

Another function of the wad/shotcup is to provide a flat, regular surface against which the expanding gases can press outward. A load of shot, even target #9, is porous, and buffered shot, which is only a load of shot whose spaces between the pellets are filled with sifted polyethylene particles, will allow gas to blow through unevenly if the shot is not backed by a wad or shotcup. The wad provides a ceiling against which the hot, expanding gas can press evenly, thrusting the shot down the barrel uniformly.

The wad also seals the gases behind the shotcup in an area of limited oxygen, an element that of course is required for combustion. Thus is the burning propellant limited in its burn rate and only by forcing the shot and wad down and out the barrel does complete combustion take place.

There are numerous shotcup designs from several internationally recognized manufacturers, but your chosen formula will note specific brands and styles: Remington SP16 or WAA12R or CB1034-28,

When building a specific load, use the specific components called for in the formula. Why? We have discussed the fact that there are several shell types for any gauge and that even though it might not be immediately obvious, some shells are straight-walled while others have tapered walls, A wad designed for use in a straight-walled Federal hull might not work to seal the

gases properly in Winchester's compression-formed AA hulls that have tapered walls. Winchester and a few other companies make wads with a smaller, angular base to fit these special hulls. In case a wad for straight hulls is used in a tapered hull, it will usually be a little on the large size, so you will have to make sure that your press seats it snugly. (Actually, this is not so rare in load recipes, but it is quite rare that a wad designed for a tapered hull will ever be recommended for a larger, straight-sided hull.)

Using the wrong wad can result in sub-par performance if it results in "powder migration" past the seal, or if significant "blow-by" (gas escaping around a load rather than pushing with all its force behind it) reduces load pressure and velocity. So variances in gas-sealing ability and the different pressures these hulls thereby produce are one reason never to substitute wads.

Most modern wads are designed to "obturate." This means that the bell-shaped gas seal flares out slightly under pressure to create a self-sustaining seal. Engineers who design shotcups understand that a tight, consistent seal gives your load maximum drive and consistent ballistic performance.

High velocity loads require a tight gas seal in the hull and in the shotgun's bore to achieve quality results. The modern phenomenon of back-boring or over-boring barrels, enlarging the bore diameter slightly beyond SAAMI standards, has become popular without much consideration of the procedures effect on the shotcups ability to seal the gas behind the load of shot. Of course, we are only talking about a few thousandths of an inch, a virtually impossible difference for the unaided human eye to distinguish, but it is significant in a manufacturing and shooting environment where the difference between success and failure is often no more than that. If gas escapes around the wad seal in an overbored barrel, velocity and pattern will suffer.

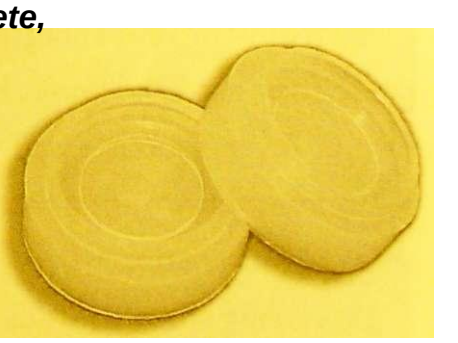
The problem of inadequate gas seal grows exponentially when shotcups from smaller, tapered shells are forced to carry maximum loads through overbored barrels. This is a mismatch, but you can easily correct it at the reloading bench.

As shot loads become heavier than the typical 1-1/8-ounce 12-gauge target loads, propellant charges become bulkier because larger amounts of slower burning powders are generally required, especially for strong hunting loads. As such, the powder charge tops off above the tapered base, rendering a tapered-base wad irrelevant. In such a load, tape red-base wads increase the risk of a poor load without any potential advantage. Consider instead using a wad with a larger, tighter fitting seaL

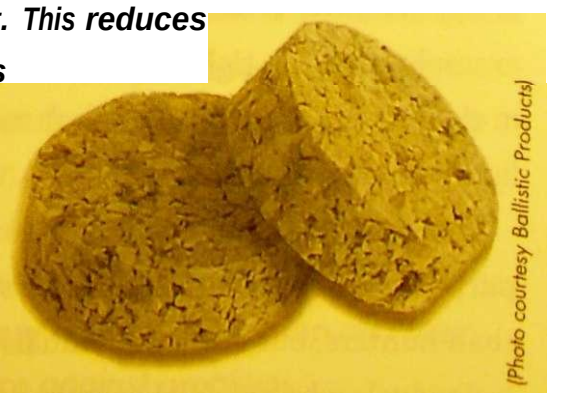
Today's wad is essentially a slick, three-part shell element, but the center section - which we have not yet discussed - is as important as the sections on either end. The center is a cushion, in effect, a collapsible spring. Its job is to work like a shock absorber, although admittedly an extremely light one, and to progressively collapse, evenly and uniformly, without tipping and thereby applying greater pressure to one side of the load.

Because the modern wad is a relatively soft plastic, you can see the imprint of the shot in an expended wad. If you pick up a couple after you shoot, you will note the permanent impressions of individual pellets and this testifies to the force of the explosive burn that the wad must accommodate. This is caused by the vertical unevenness of the movement through the barrel. The rear shot pellets move prior to those at the head of the shell and this force shows in the spent shotcup. (For someone who has never quite understood how the inside of a wheel spins at a faster speed but at the same rpm as the outside of the wheel, this is all very mystical!) Perhaps you would expect this since within a millisecond, the pressure builds to around 10,000 psi and the load achieves terminal velocity within a few inches of travel.

The writers of a former edition of this book, Kurt Fackler and M.L. McPherson, likened the effects of the powder burn to a shock wave, causing the bottom layers of pellets to "squash themselves against the upper layers." This shock, they said, was the equivalent of wrapping a towel around a hammer. The instant of most extreme shock and acceleration, which moves

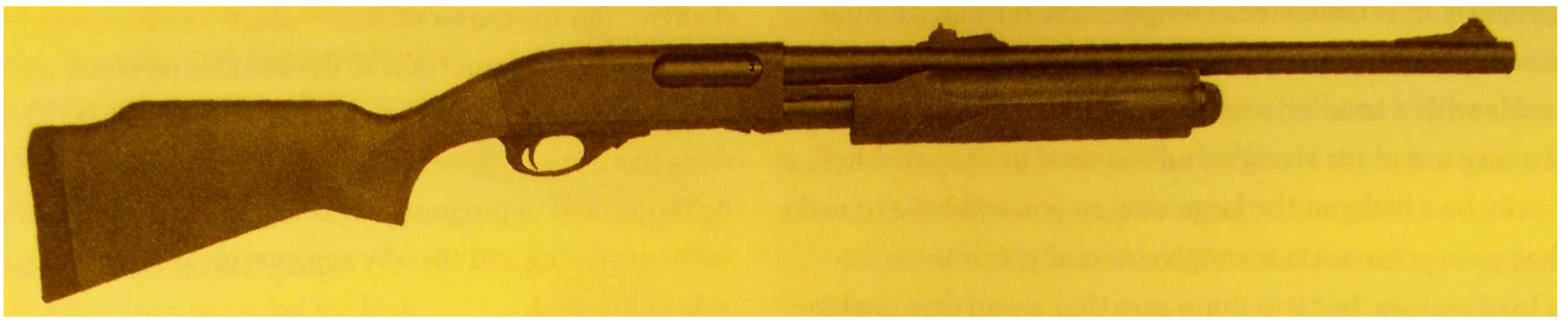


The Ballistic Products Gas Seal or BPG5 helps the powder achieve a complete, cyclic burn, with the net result of consistently higher velocities and fewer unburned grains of powder. BPGS wads are stackable, versatile enough to use in almost any type of hull and will load a huge assortment of recipes.



Cork wads protect the base of a shotcup in a magnum load. Different shot sizes vary the height of the load, so cork wads are placed beneath the shot. This reduces setback damage and brings the load up to perfect crimping height These wads are light, dense, flexible and can be stacked to make your crimp just right.

(Photo courtesy Ballistic Products)



Remington's 870 Express Deer pump-action is available in every gauge except the 10. Its barrel is rifled so it can shoot slugs and sabots accurately to 100 yards - or even farther, with a properly-mounted scope, plenty of practice, and the right combination of primer and other components.

the pellets from zero fps to maybe 1,200 fps, is cushioned.

Heavy loads tend to diminish the effectiveness of the cushion. Heavier loads of shot and heavier loads of powder, compress the wad much more significantly than lighter field and target loads. Thus, the energy wave from the powder's explosion is transferred more directly and harshly to the pellets. Probably, these heavy loads need additional cushioning in the way of felt spacers and special cushion wads that must be placed immediately below the charge of shot.

When reloading, you want this center section to compress, but not collapse. A total collapse would ruin its value and could perhaps damage or torque the gas seal. So, under the steady pressure of the wad ram, the cushion section should predictably compress to accommodate various powder heights.

We have spent quite a few pages discussing wads without mentioning the spreader or brush wad. These wads are usually made with no shotcup at all. Although outside pellets will be deformed by barrel scrub, your pattern will function very close to the true choke (a completely open barrel with no constriction) of your shotgun. Often used in guns with highly polished or chromed bores, brush wads give you exceptional results. A variation is a wad with a vertical "X" section in the center; these push a pattern much wider than the bore's marked constriction.

Discussing spreader wads prompts me to mention that the wad is instrumental in developing and understanding your pattern. Skeet and woodsy game bird shooters want patterns that open quickly, whereas trap shooters and especially handicap trap shooters need a pattern that is denser at a distance. Different types of wads can help you affect a pattern at any distance. Wads with thicker shot petals, .030-inches for example, give you tighter patterns because they act like built-in chokes, constricting your shot more than would wads with lighter and thinner petals.

Whether most handloading is done for hunting or target purposes is debatable. Competitors shoot much more than hunters, but more individuals are solely hunters than individuals who are solely competitors. Actually, most shotgunners are both hunters and competitors, at least for a part of their career, and they may wish to load for both activities. Care must be exercised at the reloading bench as loads, recipes and components are not the same.

Hunting loads often use filler wads beneath the pellets. These help cushion the shock of the shot on the lowest pellets. They can be made from felt, cork or fiber and are available in various thicknesses. Most reloading data will specify a certain type of filler and the configuration, but this is often only a suggestion. Changes in shot size affect your column height, and you may need to use different thickness to get the right height for the perfect crimp.

In the 12-gauge, shot charge can be raised to the top edge of the shotcup by placing 20-gauge card wads into the base of the cup, beneath the pellet load. You should experiment with this before you actually put hulls on the press, drop powder and insert a wad. Fillers that are pre-cut to 1/8- and 1/4-inch thickness give you a great deal of versatility. Wool felts are dense, but light, and they may be used liberally to raise the shot column as needed. Cork wads are just as light, but provide a firmer platform. Felt or cork may be used interchangeably; their minimal mass allows the handloader to use them without measurably affecting load pressures.

There is no reason you cannot run complete experimental loads, as long as you remain aware that the loads are experimental. If you are dissatisfied with the results, you can simply pour the shot and powder back into the respective hoppers and use the components again.

Some writers have recommended buying un-slit wads for heavy loads. These allow you to test for the best length of slits in the sides of the wads and to shoot patterns to see how wad slitting may or may not affect the grouping of your shot. While this may be fun once, I find it to be as tedious an operation as patterning of any load or gun. The information I gain is interesting, but since it does not come with the perspective of dozens of length slits in various wad types and powder and shot combinations it is not worth the time and effort. Nevertheless, some people swear by this - sort of a hobby

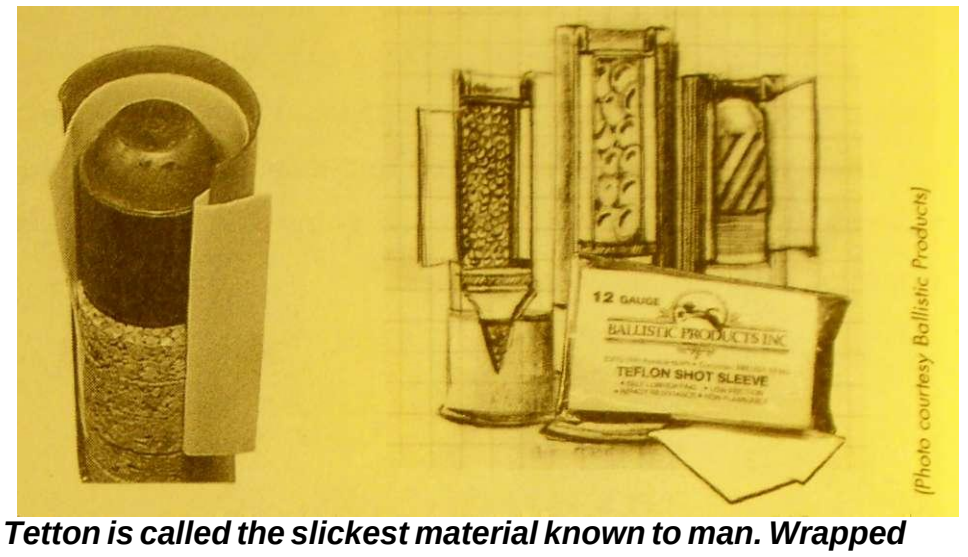
within a hobby * and you can even find special "wad slitters" to help you experiment.

Remember that your wad must have slits however to open and release your load of shot. A wad with no slits can begin to tumble with pellets inside and while it is not dangerous to man or beast, it can reduce the effect of your load. A word of caution if you want to experiment with wads and slits is that with hunting loads, three petals, two-thirds the length of the shotcup, is probably required as a minimum for all loads. The rule of thumb is that the greater the number and length of the slits, the quicker the load's pattern will open.

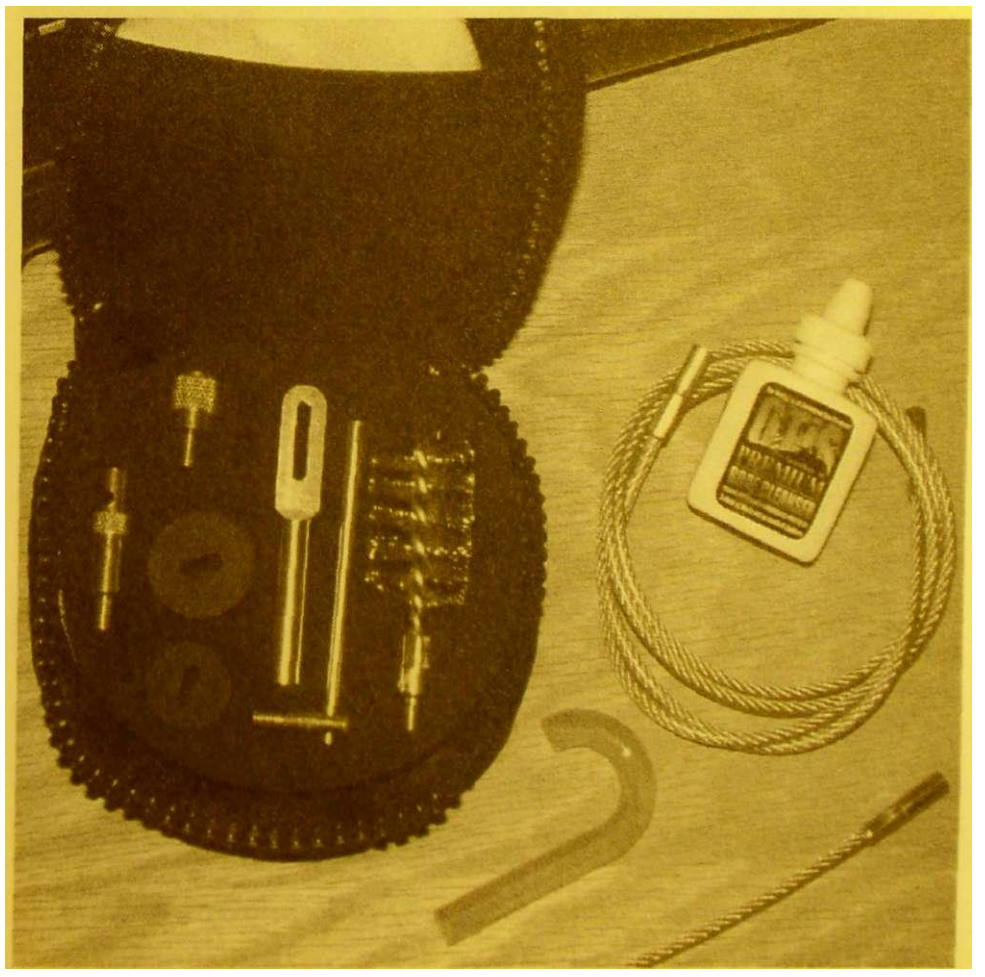
Speaking of curiosities, reloaders have the unique option of wrapping their loads in Teflon (for lead shot) or Mylar (for steel shot). Teflon wrap is a very thin and non-sticky material cut to size and wrapped inside the shotcup by hand as a long-range carrier for large capacity 10- and 12-gauge loads. The wrap allows reloaders to create certain space-consuming loads that would not otherwise be possible due to volume limitations within a shotshell, but proper recipes and loading instructions for these Teflon-wrapped loads must be followed precisely. Available from Ballistic Products (a pack of 50 sleeves for $10) or perhaps your local retailer, Teflon wrapping allows you to make specialized loads for turkey hunting or with buckshot and slugs. Large payloads benefit from the increased velocities obtained.

Of course, Teflon and Mylar are not interchangeable. Mylar is not as slick or as thin as Teflon, but is used inside steel pellet or Hevi-Shot shotcups only. Unlike Teflon, Mylar's sole purpose is to offer your barrel that extra measure of protection from the scrubbing action of steel shot pellets. A secondary function is to reduce any scuffing of pellets as they travel down your barrel and this will help concentrate pellets in the heart of a pattern. Ballistic Products offers four different packs: 100 Thin .003-inch wraps for smaller pellets in the 10- or 12-gauge for $4; 50 Thick .010-inch wraps for the 10- or 12-gauge for $3; 100 Slim .003-inch wraps for light 10- and 12-gauge payloads for $5; and 100 1620s for 16- and 20-gauge loads for $5.

An occasionally overlooked reloading note is that you should inspect unused wads in the same manner that you would inspect your hulls, before using them. Wads are mass-produced, by the millions. Unlike hulls, once shot, they cannot be re-used. Some typical problems are incomplete molding (most often seen in the petals), holes in the plastic that could allow gas to leak, misshapen gas seals or even brittleness. The ideal wad is formed under ideal conditions, but molding wads is a chemical/mechanical process. Like manufacturing everywhere, this process is subject to all the variables of man made equipment and to "circumstances beyond our control." Things occasionally go wrong and no matter how alert a company*s quality control staff is, many things happen that are outside their awareness: temperature variations in molds, slight changes in the chemical composition of materials and so on. So give your wads a quick inspection before you place them inside a hull. Chances are that you will occasionally discover a reject and when you do, you have eliminated one more variable in the hitting vs. missing equation.



Tetton is called the slickest material known to man. Wrapped around a slug or slipped into the shotcup before your heavy buckshot load, Tetton liners seem to aid the *payfaad's* ***passage out your barrel, reducing shot deformation and barrel scrub. They are easy to use, but must be inserted in loads one at a time.***

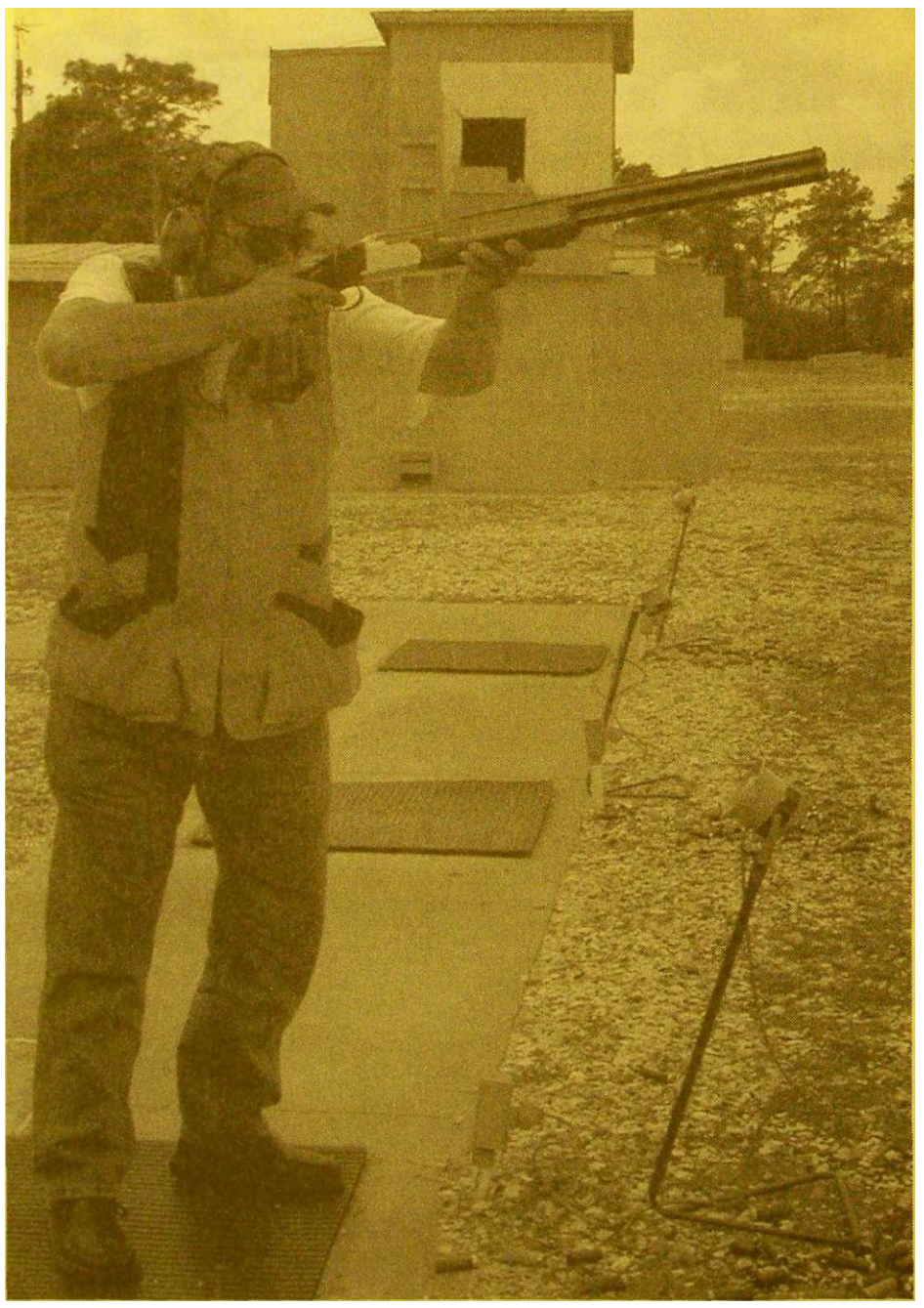


No matter how good your load is, if you have a gun with a fouled barrel, you will not get the most production out of any combination of shot, powder, wad, hull and primer. A small cleaning kit such as this one from Otis can be tossed in the fanny pack or looped on the belt for a mid-day barrel swab in the field or on the range* These little kits are cheap and they provide high quality insurance against problems*

Chapter 3

PROPELLANTS

If you thought school was over, you should not be reloading. There is a lot to learn. If you are smart and lucky, though, your learning curve is going to last a lifetime. Now, however, is the time to recall all the science classes you snoozed through, the ones that attempted to teach you about the relationships between temperature, pressure and volume, because all that information is going to come in handy when you begin handloading.



Trap is a game of discipline, especially at handicap yardage or for bunker or international trap. For many top shooters, it requires turning the mental volume to zero and allowing their well-practiced reflexes to do all the work. Standard 12-gauge trap loads are typically 1-1/8-ounces of #7-1/2, although many shooters begin at the 16-yard line with #8s. For competition, shells are also regulated by maximum shot velocity: 1,290 fps for hl/8-ounce loads, 1,325 fps for I-ounce and 1,350 for 7/8-ounce.

To blow your pellets out the muzzle with the velocity required to kill down-range game or to break flying targets, your shotgun load must generate a great deal of pressure in the barrel. Achieving this pressure requires that an expanding volume of very hot gas be temporarily confined within the chamber of your shotgun. Thus, the fixed dimensions of a steel chamber become, in a sense, active ingredients in a reloading formula or recipe.

As a reloader, you will develop loads and select load ingredients based on the confining volume of - or you could say the compression that develops inside - a particular gun's chamber, a 10-gauge chamber being larger than a 12-gauge, for example, and a 3-1/2-inch shell larger than a 2-3/4. Without precision containment and the development of sudden, overwhelming pressure when the hammer and firing pin hit the primer, there can be an explosion, but no shooting. Within milliseconds - millionths of a second - your #00 or #8-1/2 shot (plus the wad) go from zero fps to 1,200 *fps* or thereabouts inside the tightly confined space of your shotgun's barrel.

For this kind of shot velocity, and the pressure required to achieve it, you need what is called a "controlled burn" of a high energy propellant, not an instantaneous explosion. "Controlled burn" fairly well describes what happens when you pull the trigger: the hammer strikes the primer, which explodes and showers the compact mass of powder with hot, burning sparks. Once it ignites, the powder begins to undergo a chemical change, transforming from a solid to a burning, expanding gas. As pressure increases in the chamber, the powder continues to burn at an increasing rate, using all the available oxygen. (Curiously, oxygen from the air is not necessary for the combustion of smokeless powders since they contain sufficient built-in oxygen to burn completely, even in an enclosed space such as the chamber of a firearm.) The hot gas intensifies the compression in the chamber and bore, and the cycle accelerates to its climax. Of course, something has to give way to the expanding gas. The weakest link in this case is the wad and shot column, which are held at the mouth of the barrel solely by the folded or rolled crimp on the end of the hull.

The correct controlled burn, the one that drives a particular combination of shot and wad out the barrel at or close to the speed advertised, requires that manufacturers pay meticulous attention to their loading formulas and the pressures they

IMR's "HiSkor" 800X smokeless powder burns more slowly than 700X and has applications in smaller gauges, target loads, 12-gauge field and heavier handgun loads. Many shotshell powders are dual use - for handguns and shotguns - because they operate at the low end of the pressure scale.

generate. Confinement and compression come first; pressure comes next. Velocity and kinetic energy are last, by-products, the result of numerous variables, some of which we can control and some we cannot. Nevertheless, pressure is the one we reloaders can directly affect.

PRESSURE: ! I SERVICE AND PROOF

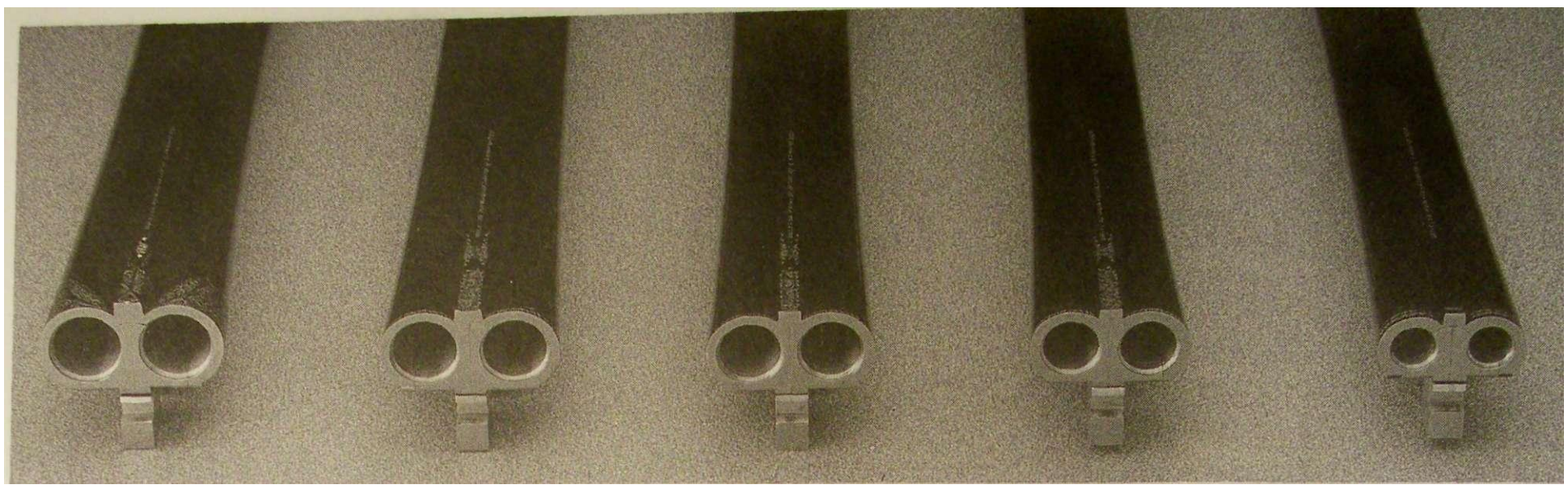
One hears about several types of pressure, but for handloading there is only one pressure that you truly need to understand, service pressure. Service pressure is the maximum pressure in pounds per square inch (psi) below which you can safely operate your particular shotgun and above which you can anticipate trouble. SAAMI has organized US gun manufacturers to adhere to a set of standards for service pressure, and all modern models of guns made in the US are proofed or tested to make sure they withstand these pressures.

Service pressure is predicated on the diameter of the bore (its gauge) and the length of the chamber (in inches). It is understood that the standard gives you a tiny bit of leeway to make a mistake in handloading. If you exceed the service pressure **with** a load delivering **10** or even **100** fps greater than load data suggests is correct, your load will probably perform just fine and your gun will be safe. For your own sake though, you should consider the service pressure to be an inflexible ceiling.

By saying that service pressure gives you some leeway, I mean that it is purposefully fudged. SAAMI does not discuss this "fudge factor" in public, but it is perhaps as little as 10- to as much as 25-percent above the advertised service pressure. Still, this number is much lower than what is called "proof pressure."

Proofing is an electro-mechanical process of testing barrels to be sure that they will withstand normal shooting for hunting or competition. It involves firing super-hot, high-pressure shells (heavy shot and slow-burning powders) and then measuring their effects in a barrel. Normally, manufacturers test shotguns with one or two proof rounds and then carefully examine the barrels for damage. You may be certain that any modern barrel has been carefully proofed to keep you safe, keep your pellets in the vicinity of the target and minimize the possibility that any shooter will be injured.

After proofing, barrels are customarily stamped with a particular indentation that indicates they have been tested. Proof stamps are the kind of minutiae that fascinates



Proofing is one of the final stages in barrel development Although barrel-pressure standards are developed by SAAMI, compliance is voluntary and each US manufacturer proofs and marks the barrels it produces. In Spain on the other hand, where AYA produces fine side-bysides in the Basque region, proofing must meet national legal standards.

(Photo courtesy The Lost Target)

Cold weather can be a problem for a slow burning powder in a hunting load and, depending on the temperature, will affect your hotter-burning target loads as well. (In case you did not recognize it, this heavily bundled Canadian sportsman is shooting in the snowl)

students of shotgunning, in part because the stamps of foreign "proof houses"* are interesting for their variety and intrinsic history Americans, who are typically more casual with their sense of tradition, commonly neglect such attention to detail preferring instead to concentrate on the shooting characteristics of their guns and loads as tools rather than heirlooms, means to an end rather than the end in itself.

Chances are that you will never see a shell marked for proofing, but if you do, it will bear a conspicuous label ("Danger - High Pressure") and may, in addition, be clearly marked as a proof load. If you do see such a shell, do NOT attempt to fire it through your personal gun. A proof load generates pressures far in excess of the accepted service pressure. If you are shooting a 12-gauge Remington 1100 chambered for 2-3/**4**-

inch shells, the maximum SAAMI service pressure standard is 11,500 psi. The SAAMI proof pressure for this popular gas gun on the other hand is achieved with a load of 1-1/2-ounces of shot and measures between 19,000 psi and 20,500 psi, practically twice the service pressure. Not only would repeated firing of that level of pressure damage your gun, but its recoil would probably knock you off your feet

SOME PRESSURE PROBLEMS

Loss of pressure during the burning cycle diminishes any chance of a complete and efficient powder burn. The result is shot pellets without the energy or velocity you normally expect and a greater build-up of crud in your barrel. A small interruption could be a collapsed gas seal, for example. Inconsistent pressures and velocities are the clues that your load components may be breaking down.

Irregularities in the pressure curve, perhaps caused by a component shift, reduce the effectiveness of the propellant burn because compression momentarily slackens. These unpredictable component shifts have several identifiable origins: weak cushion sections in wads, weak seals or worn-out hulls with poor crimps. Many substandard loads sound fine when they are fired, but compared to a more perfect load, actually produce inferior velocity and energy delivery. If your load experiences a loss of pressure, even a minute loss, pellets may be getting out there, but not with the speed and energy you expect.

It may surprise you to learn that shotshells are designed to operate at the low end of the powder-pressure spectrum. All powders, particularly those that burn slowly, are sensitive to compression and with improper or leaky containment, burning will inevitably be less than complete. It is also true that a lighter than average load may reduce your chamber pressure to a point where the proper burning cycle cannot be concluded.

What do you do when you pull the trigger on a reload and the gun seems to fire, but without its customary authoritative kick? You may have an obstruction in the barrel caused by a faulty load. Stop immediately and, with the barrel pointed dovmrange, perform a visual inspection. It is possible that the wad has lodged inside. If you fire another round behind I into it, the resulting traffic jam in the bore can cause a manently ruptured barrel and could hurt you and those around you.

FIRE IN THE HOLE!

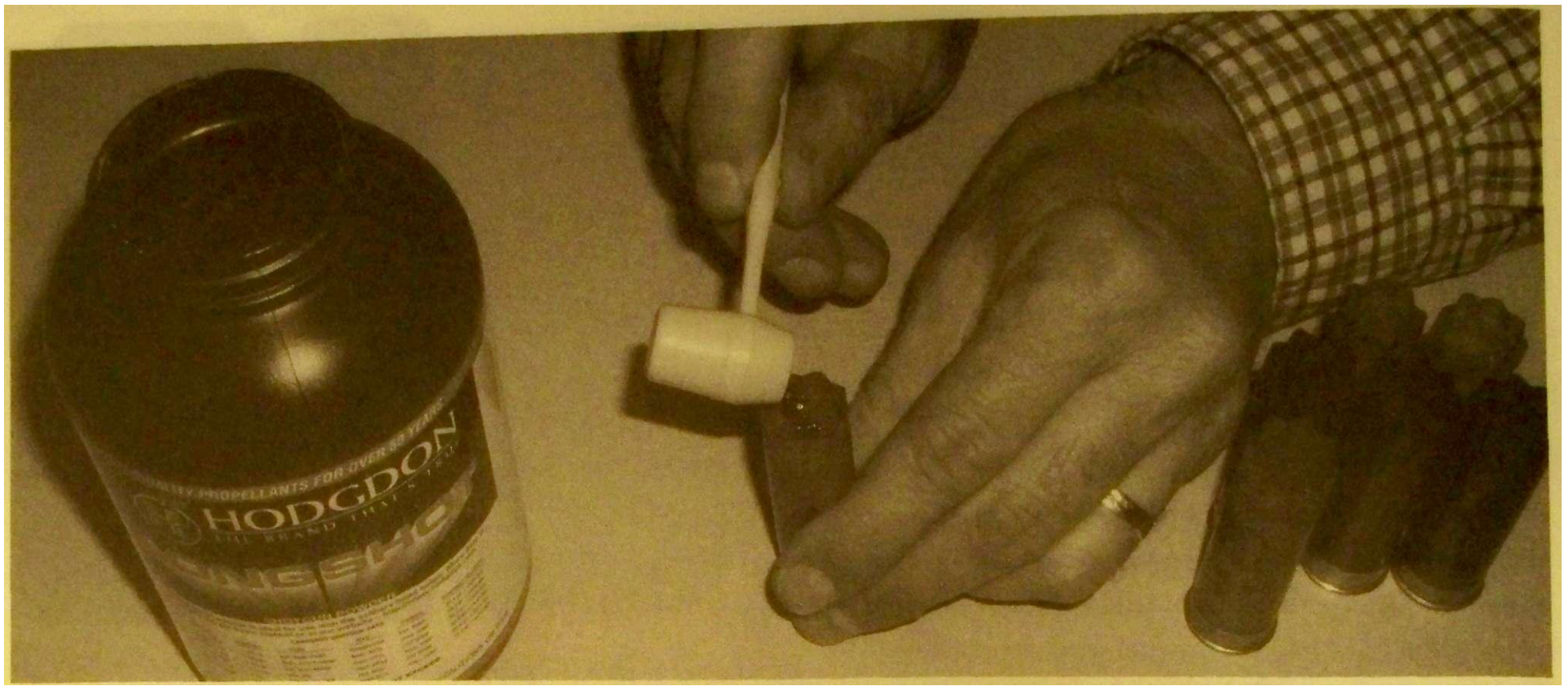
So, what happens when you pull the trigger? The powder ignited. It begins combining furiously with its own oxygen

Load for your 12-gauge with Hodgdon's Clays and Titewad, especially for target and light field reloads. Clays and Titewad are also rated for competition pistol reloads in the 45 ACP and 38 Special. Clays, Hodgdon says, produces "soft, smooth recoil" and burns "ultra-clean" with a mild muzzle report and excellent patterns. Titewad is a "flattened spherical" powder with low charge weight, "mild muzzle report, minimum recoil and reduced residue for optimum ballistic performance."

to create an ever-expanding column of ultra-hot gas, but at a constant pressure (for maximum pellet velocity), and that column takes up an increasing volume of space. This is what pushes the shot out toward the flying pigeon. When the shotcup leaves the barrel, air resistance causes it to fall away within about 10 yards, and the speeding shot rushes on toward its intended target, although its velocity begins to diminish immediately upon exiting the barrel.

The column of hot gas is engineered to balance the burning powder with the expanding volume. Hence, powders are grouped by "burn rates." If all of the powder burns before the shot passes the forcing cone, the shot may begin slowing down inside the barrel and that, obviously, is not going to give you the perfect solution to any shooting problem. Here are the generally accepted guidelines, but remember that engineers develop loads for practically every possible combination and circumstance, so these are only "rules of thumb":

- Lightweight loads with moderate velocity, typically target and small game loads, fall into a faster burning powder category. (Example: Introduced in 1992, Hodgdon's Clays "produces soft, smooth recoil, ultra clean burning, mild muzzle report and excellent patterns.")
* Heavier hunting loads, which typically have greater velocities, predominantly use slow-burning powders. (Example: Introduced 85 years ago, Alliant s **Herco** is a **"proven powder** for heavy shotshell loads/')



If your reloading press breaks, you can build loads by hand... with the right measuring devices, that is. A I-l/8-ounce load **of** *#8s will be about 460 pellets. You can count those. You can also use hand dippers to check the throw of your loads.*

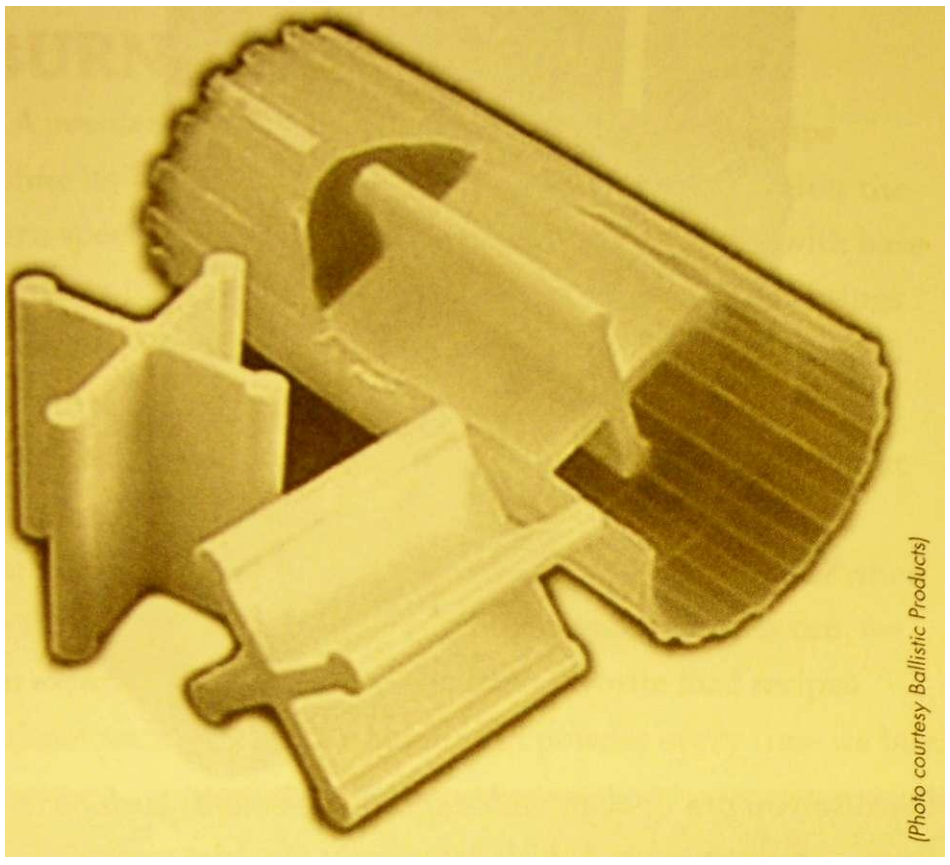
Powder burn rates are important. Many hunters endure the foulest, coldest weather to hunt deer or waterfowl, and our Canadian cousins revel in organizing sporting clays events when orange birds show up remarkably well against mounds of snow and ice. With an already slow-burning powder, low temperatures can cause a problem on a frigid morning in a Maryland duck blind. We know that cold retards ignition and causes powder to burn slower. To optimize your shotguns performance in these conditions, you need specially constructed loads perhaps upgrading to a medium burn rate powder. You may also want to consider using heavier loads and new hulls for stronger crimps. Hot primers are more likely to cause good powder ignition in cold weather because they were developed for just such a situation.

This is precisely why handloading is such a virtuous pastime for shotgunners. It allows us to craft loads for conditions, and to laugh at our over-the-counter buying cousins. Different recipes will give you different results and you can load differently for hot days than for cold days. (To be honest, even experienced shotgunners usually cannot perceive any difference in their load performance as temperature changes, but they are aware that there is a difference.)

Although they do for the most part list velocities for over-the-counter shells, ammunition companies do not publish pressures for their commercial loads in either their catalogs or on their Internet sites. Ammo manufacturers are often stingy about revealing the amount of powder in loads as well, preferring simply to list that number (that number being the relatively archaic "drams equivalent") as "max " Of course, there may be a good reason for this.

If you are a little confused about "dram equivalent" as a measure of powder, join the club. Here is how SAAMI defines it: "The accepted method of correlating relative velocities of shotshells loaded with smokeless propellant to shotshells loaded with black powder. The reference black powder load chosen was a three-dram charge of black powder, with 1-1/8 ounces of shot and a velocity of 1,200 fps. Therefore, a three-dram equivalent load using smokeless powder would be with 1-1/8 ounces of shot having a velocity of 1,200 fps or 1-1/4 ounces of shot and a velocity of 1,165 fps. A 3-1/4 dram equivalent load might have 1-1/8 ounces of shot and a velocity of 1,255 fps. Abbreviated Dram Equiv." It will not help to look up drams in a standard dictionary either, because you will be confronted with either the pharmacists' (apothecaries') 1/8-ounce or the avoirdupois (common US measure) 1/16-ounce! Lee Precision notes that a dram is a unit of weight that is slightly larger than 27 grains - and there are 7,000 grains in a pound. "It was a standard measurement for black powder, but in recent times," Lee says, "powder is measured differently. Currently there isn't any known way to safely measure smokeless powder to a dram equivalent." Bottom line: do not worry overmuch about "dram equivalents" as it concerns reloading. Stick to published data tables and you will be fine.

It may not always have been the case, but today, in our increasingly litigious society, manufacturers test and evaluate every load possibility. They mark each load sold with a "lot number," and this practice allows them to refer to specific variables at the time of its manufacture: outside temperature and humidity, the component supplier and any of the thousand and one things that can vary ever so slightly in a complex process.



(Photo courtesy Ballistic Products)

The X-Stream spreader insert spreads conventional patterns, filling in fringes for crossing shots, upland birds or even waterfowi over decoys. It can be used in any wad, because it does net require a special rammer tube or special tools, and it fits inside JO- to ***20-gauge brush wads. The X-Stream displaces less than 1/8-ounce of shot and weighs only 6.1 grains.***

When I **was actively hunting with the bow and arrow, it always bothered me that manufacturers were not able to engineer broadheads (the razor-sharp arrowheads) to a precise standard. A package of six broadheads advertised as 125-grain heads, would actually include a range of heads weighing between 118 and 130 grains! Even though target competitors at the highest level would fuss over that difference, the variation hardly mattered in the flight of an arrow, certainly not for** hunting purposes **at the limited distances** I **shot, out to maybe 35 yards. The same is true of shotshells.**

Pressures **and hence velocities generated from shells within the same box will vary, although variations are so slight as to be virtually insignificant whether you are standing at skeet station six or pass-shooting teal in Louisiana. As I have mentioned, ammunition companies used to be reluctant to publish velocity data, but with increasing standardization of loads, components and conditions, velocity variations in specific ammo lots is no longer a source of consumer complaints. Because we know that temperature (and humidity) affect performance, ammunition is routinely tested at approximately 65 degrees Fahrenheit.**

Barrel pressure *translates into shot* velocity, and that means kinetic energy or killing power. Of course, whatever its *muzzle velocity*, a round pellet begins losing energy and speed quickly. Round may be *stable* in flight, but it is not especially aerodynamic, A 2-3/4-inch 12-gauge load (1-3/8-ounces of #5, or **217** pellets) of Kent's tungsten-polymer shot may have a muzzle velocity of **1,480** fps with an individual pellet energy of **11.7** ft-lb, but within **0.12**-second of pulling the trigger, it has traveled **40** yards and its velocity is halved, to **740** fps. Significantly, at this speed, these same heavy pellets have dropped to about **25** percent of their energy carrying capacity, from **11.7** to **2.9** ft-lb.

Pressures for the most effective velocity and kinetic energy must be different for lead than they are for steel or other types of shot. Lead shot absorbs energy more readily than steel shot, which is 1/**3** lighter. Therefore, steel normally must be shot at a higher speed to achieve the equivalent killing power of lead. And of course, the more kick in the wad you give with a hotter and heavier load of propellant, the greater the lead will tend to deform and spread your pattern. Steel, on the other hand, and some of the non-toxic shot that is mixed to out-perform lead will not deform at any speed. It is possible to shoot 2,000 fps with a modern shotgun, but that rate of speed may actually cause more problems than it currently solves because of decreased pattern density, increased pellet fragmentation and, quite likely, 100 ft-lb of recoil! Not many hunters I know would appreciate that kind of pounding.

POWDERS: THEIR COMPOSITION AND CHARACTERISTICS

In its earliest form, blackpowder was a formulation of about 75 percent saltpeter, 12 percent sulfur and 13 percent wood charcoal. A proper combination of these ingredients provided a relatively controlled, high-speed burn and created gas and heat. It must have taken many years of experimentation, beginning we are told in the ninth century A.D., possibly in China. One can only imagine that arriving at this "proper combination" took many lives as well, because improper combinations resulted in dud rounds, uncontrolled premature explosions and uncomfortably separated appendages.

Affiant's Herco is a popular and versatile shotshell reloading powder, along with Green Dot and Red Dot

The development of modern smokeless powders, through guncotton, *Poudre B,* cordite and ballistite in the 1800s cleared the smoke from a battlefield. This allowed a combatant to see better, because there was no billow of gray smoke around his head after he shot. Going smokeless also prevented his enemy from pinpointing his location. Smokeless powder's nitrocellulose base boosted the energy level of any given volume of powder. This, in turn, boosted the speed, accuracy and penetration of sporting and military shot.

It can be argued that the smokeless revolution of the nineteenth century turned powder into propellant, and thus fundamentally changed all of the ballistic equations and even the internal structure of firearms and projectiles. With proper confinement - not too much and not too little - explosives become propellants. Taking advantage of a confined propellants relative stability and controlled burning properties is the essential characteristic of internal ballistics today.

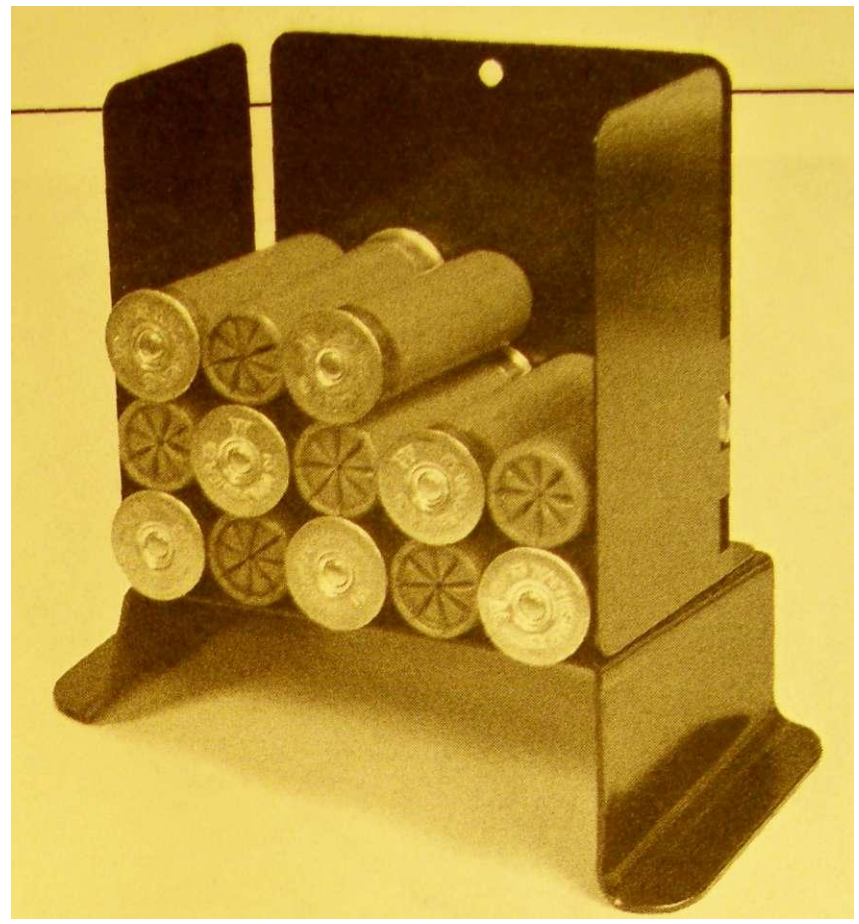
Smokeless powders are made in three forms, which you can confirm by assembling a few flakes of the right powders under a microscope. The first is a thin, circular flake or wafer. The second is a tiny cylinder shape and the final is a small sphere.

Today's smokeless, nitrocellulose-based shotgun powders are either single-base or double-base. Nitrocellulose is a pulpy, cotton-like material derived from cellulose (a roughage or fiber such as finely-ground tree trunks) and treated with specific formulations of sulfuric and nitric acids. To change a single-base powder to a double-base powder, add nitroglycerin. Single-base powders do not contain nitroglycerin; double-base powders do.

Nitroglycerin is a heavy, colorless, poisonous, oily explosive liquid obtained by nitrating glycerol (a form of alcohol), which means combining it with nitrogen. The well-known nitroglycerin is a fast-decomposing chemical compound with molecules that can be thought of as a tightly wound spring. Apparently, it just sits there, waiting for a chance to unwind or "deflagrate." (Deflagration is a very slow explosion or a very fast burn, which generates subsonic pressure waves. Contrast this with "detonation," which produces supersonic pressure waves.)

Thanks to this tightly wound chemical spring, double-base smokeless powders such as Alliant's Red Dot generate tremendous energy for their volume compared to blackpowder. Because of this quality, reloaders can use less powder for specific results and those results can be modified by the addition of highly specialized igniters, fillers, taggants, coatings and retardants.

Chemical retardants are added to powder reduce its burn speed. Without these retardants, powder energies would be



Because you are dealing with explosive elements such as primers and powders (which technically may not explode, but certainly will burn very very fast!) every reloading manual preaches that neatness is a virtue to be cultivated, even with or especially with finished shells.

difficult to control. Otherwise, almost any basic nitro product would be too explosive, far exceeding performance parameters for any particular load. However, with more retardant, the correct level of burn speed and power may be achieved and the lot certified for use by reloaders.

Smokeless powder granules burn only on their surface, as they have plenty of chemically built-in oxygen. Larger granules burn more slowly than smaller granules and the burn rate is further regulated by the retardants mentioned above.

Unless a bottle of powder specifically recommends against this practice, it is probably a good idea to slowly roll the powder on its side for a moment or two before using it. The idea is to remix powder that will already have been handled a dozen times, shipped half way across the country and may have been sitting on a retail shelf for months. Obviously, remixing is easier with round bottles than with other containers, but a slow and steady turn or two may accomplish the same thing.

Do not overdo this remixing though, because if you are overzealous, you can end up breaking and reducing the size of too many granules through friction. This could alter the burn rate of the powder, making it unsafe to use in certain recipes.

Powder can be vibrated hard enough during shipping to break down the granules into finer units. Part of a powder's burn rate is determined by the size and shape of the granules. If the granules become smaller, the powder's character will be altered toward a faster burn rate and increased bulk density as the granules break down because more surface area is exposed. Metering may get a little strange, too. So weigh your powder charges and trust your scale.

BURN RATE *

A powder s formulation and particular granular shape define its "character." Inert retarding chemicals that alter the burn speeds and energy levels of powders are mixed with base elements to stabilize each batch or lot of powder. This brings individual lots into a standard performance range associated with that powder. (For reloading, we use standardized performance measurements for dropping a specified amount of a particular powder with an exact measure of other components, ultimately creating a load. This means that when we run out of our favorite powder and order another can, we can expect similar performance from favorite load recipes without recalibrating the amount of powder every time we buy.)

If you choose to shod older firearms, perhaps in events specifically designed for them such as The Vintagers get-togethers, yew will want to research powder and shot formulas that will shoot effectively but safely in your Edwardian or Victorian side-by-side.

A clean-burning powder with applications for 12-, 20- and 28-gauge target and field loads, IMR's SR 7625 is also viable for handgun loads.

Smokeless powders may roughly be divided into three categories by burn rate: fast, medium and slow. Most often, we refer to rate of burn, measured in milliseconds - 0.000001-second - to determine performance parameters. This characteristic is a powder's character or its application, and understanding character helps you learn about the power of your loads.

Powders with medium burn rate characteristics, for instance, are frequently used in extended range loads. When a trap club stages an "Annie Oakley" event or some other handicap shoot off, expect super-long-range shooting. Now, the heaviest load allowable under American Trap Association rules is a 12-gauge, 1,290 fps, 11/8-ounce of #7-1/2, usually 3-dram. Experienced shooters normally prefer something lighter for the 16-yard game, but at long distance, #8 shot does not pack the needed energy; neither does a 1-ounce load have sufficient pellets to fill the pattern well at 45 or 50 yards; and a slighter dram load gives the shot even less energy at distance. Obviously, performance of the standard trap load using a fast burning powder and standard velocities diminishes at distance.

Reloaders can increase velocity and pellet effectiveness for long range by changing loads, by stretching the slope of the pressure curve to apply a greater total push to the shot charge. Switching to a medium burn powder will fire a heavier load with greater authority while staying within safe levels of pressure.

HI 10 from Hodgdon is a spherical 410 powder and is also rated for top velocities in medium to magnum use with pistol reloads: 44 Magnum, 454 Casull and even the 475 Linebaugh.

The best hull for your gun and load gives you the cleanest shot One size does not fit all load recipes, and particular hulls are specified for each recipe* This deep-based plastic Multi-Hull uses a plastic disk base wad of Riefenhauser design - durable, not susceptible to moisture and economical with space in Ate hull for large loads.

For general applications, medium burn powders are often overlooked, misunderstood or ignored by reloaders. Some of these powders (Affiant's versatile Unique, for example) can boost the velocity of both light and heavy loads without breaking a gun's service pressure ceiling.

The burn rate" is not printed on canisters of powder because of a concern that someone might wish to calculate (rather than have manufacturers test under highly controlled conditions) a load based upon partial information, and burn rate is relative, depending upon the condition of its use. However, understanding that there are differences in powder burn rates and how powders can be applied is useful information for handloaders. Here are a few basic facts, rules and tips concerning smokeless powder propellants:

- Fast burn rate powders are typically associated with light payloads for any gauge, usually in trap, skeet and sporting clays shells, or for small game such as quail and squirrel, as greater shot weight will make the pressure skyrocket and the results can be unfortunate.
- With fast burn powders, it is harder to detect imperfect burns than with slow burn powders. A fast burn covers more defects.
- Everything with powders is relative. "Fast burn" only means faster when compared to other powders, which are slower, and all burns are completed in milliseconds, anyway.
- Fast burn powders are "less elastic" in application and forgiveness compared to slower burn rate powders.
- Fast powders are generally useful in larger gauges. Assuming an equal charge of shot is used, the difference in fast- and slow-burning powders in the sub-gauges is dramatic.
- Smaller gauges put medium and slow burn powders to best use. Smaller chambers generate very high pressures with fast burn powders. Small-chambered guns use relatively slow burn rate powders and usually generate higher chamber pressures than the larger gauges.
- Cold temperature retards all propellant burn rates to some degree. Slow burn rate powders may not ignite well under severe conditions.
- There is not a parallel relationship between the potential velocity of a load and the relative burn rate of the powder (i.e., faster burns equal greater velocities), but the two are related.
- More powder does not mean additional velocity. In fact, a drop in velocity - as well as other negative consequences - may occur with too much powder in a shell.
- Light payloads of shot combined with slow burn rates can result in a great amount of unburned powder and unhelpful fluctuations in pressures.
- Weak crimps, especially in older hulls, or air pockets left in the powder area can result in unburned powder or even "bloopers," where the shot barely dribbles out the end of the barrel.
- Use nominal wad pressure when loading, just enough to force out all of the air and securely seat the wad. This is all that is required for proper combustion.
- Store powders only in their original containers. These containers are designed to burst at very low pressures, only allowing the propellant to burn quickly, not explode. Solid containers could create bombs. Your propellant does not know the difference. Keep containers tightly sealed.
- Never put one type of powder in another type of powder container and never mix powder types.
- Be familiar with the ordinances pertaining to home storage of powder and the amounts that are allowable in your town.

POWDER DIFFERENCES

Most reloaders want a "clean burning" powder, but clean burning depends on how and when you use a specific powder. Some powders leave more unburned residue clinging to the barrel than others used in similar circumstances, but a small change in environmental conditions might reverse the results.

Any head-to-head comparison of powders at the "hotter" end of the burn rate spectrum (high energy and low volume) against slower burning powders cannot be very scientific

because it ignores application. Faster burning types do not have as high a percentage of the inert retardants as slower burning powders. Thus, a slow-burning magnum powder leaves substantial residue in your barrel, but you do not want to use a target powder for a high-speed, magnum load. Buy powder to meet your shooting needs and your expected results, and do not use a particular powder just because you have half a can left over from your last loading session.

Depending on many variables, shotshell powders have wide variations in ignition quality. As I have mentioned, in freezing temperatures, one powder may be harder to light off than others. Some smokeless powders operate better in one gauge than in others, too, and the manufacturers are generally very good about testing and noting this fact.

Powder ignition character is altered by other components and factors as well as temperature, humidity and gauge. Certain types of hulls are better hosts for specific powders than other hulls. The sealing quality of a wad, its compatibility with the hull and a recipe s payload weight will alter the power and timing of ignition, as do the crimp and hull condition.

For the new handloader, any ignition problem can be frustrating. Usually, the source is a small problem of misapplied components, but we need first be aware of how components relate to proper burning cycle.

THE PERFECT LOAD

It is often written that new reloaders yearn for a "universal load." One powder, one weight, one component: all easy to load and a dream to shoot. That scenario is far too simple a picture of reloading or reloaders. We all might like the perfect load, but even if the loads were simplified, the targets and hunting conditions are not. Game bird hunters, for example, have many different ammunition needs, possibly even more than have been developed to date. Weather conditions impose additional hurdles and, if we handloaders are to become super-specialized for best possible results, we want to fire refined shells specifically designed for the game, weather and type of gun used. Powder has a great influence on the overall picture.

Most powders are developed for a specific purpose and then are applied to other uses. For instance, the old SR in IMR's SR-**7625** powder stood for Small Rifle. Still, this propellant worked very well for many shotshell applications. Although there is not a great deal of crossover between rifle and shotgun, shotguns and handguns share numerous powder types. Rifle powders burn *too* slowly for anything except perhaps the .410. Extruded tube-type powders, those used primarily in rifle reloading, just do not work well in shotguns.

Even shotgun-specific powders are stretched in different directions. AUiant's Blue Dot is fine for magnum loads of lead or steel, but below **32** degrees, it loses its performance edge. When the thermometer dips below freezing, Blue Dot is not recommended. Some medium burn rate powders can be stretched in several ways and fast-burning powders that impart energy very quickly have the duty of getting light loads underway fast. Slow burning powders build to a crescendo of energy, transferring it to the mass of shot over a longer period of time. The beauty of shooting a shotgun is the wide world of possibilities in hunting and competition that are open and each opportunity has loads that work best for it under specified conditions.

For a powder to have great elasticity, to have many uses, it must exhibit good ignition through a wide range of loads with no sharp spikes in pressure. When stretched over a wide range of loading applications, some powders reveal qualities that reduce their usefulness or efficiency. The original reason for choosing a powder may become less clear. It is knowledge of powders and their individual characteristics that allow handloaders to make better load choices, using powders that are best suited for the conditions at hand or anticipated.

Some powders are bulky and occupy a large amount of hull space. Powder volume has a great influence on the wad column height, and which wad fits best. This factor operates both for us and against us in handloading, because it may either give or take away component options.

If you have room on your reloading bench, a Bushing Rack will help you keep your bushings arranged. (This is an especially thoughtful accessory if, like the author, you are more than 50 years old and must continually search for your glasses only to discover that you are wearing them,)

Now part of Hodgdon, IMR is the oldest powder manufacturer in the US. IMR's "Hi-Skor" 700X is a double-base shotgun powder developed for 12-gauge target loads, but it also has applications in handgun rounds. It is available in 1-, 4- and 8-pound bottles.

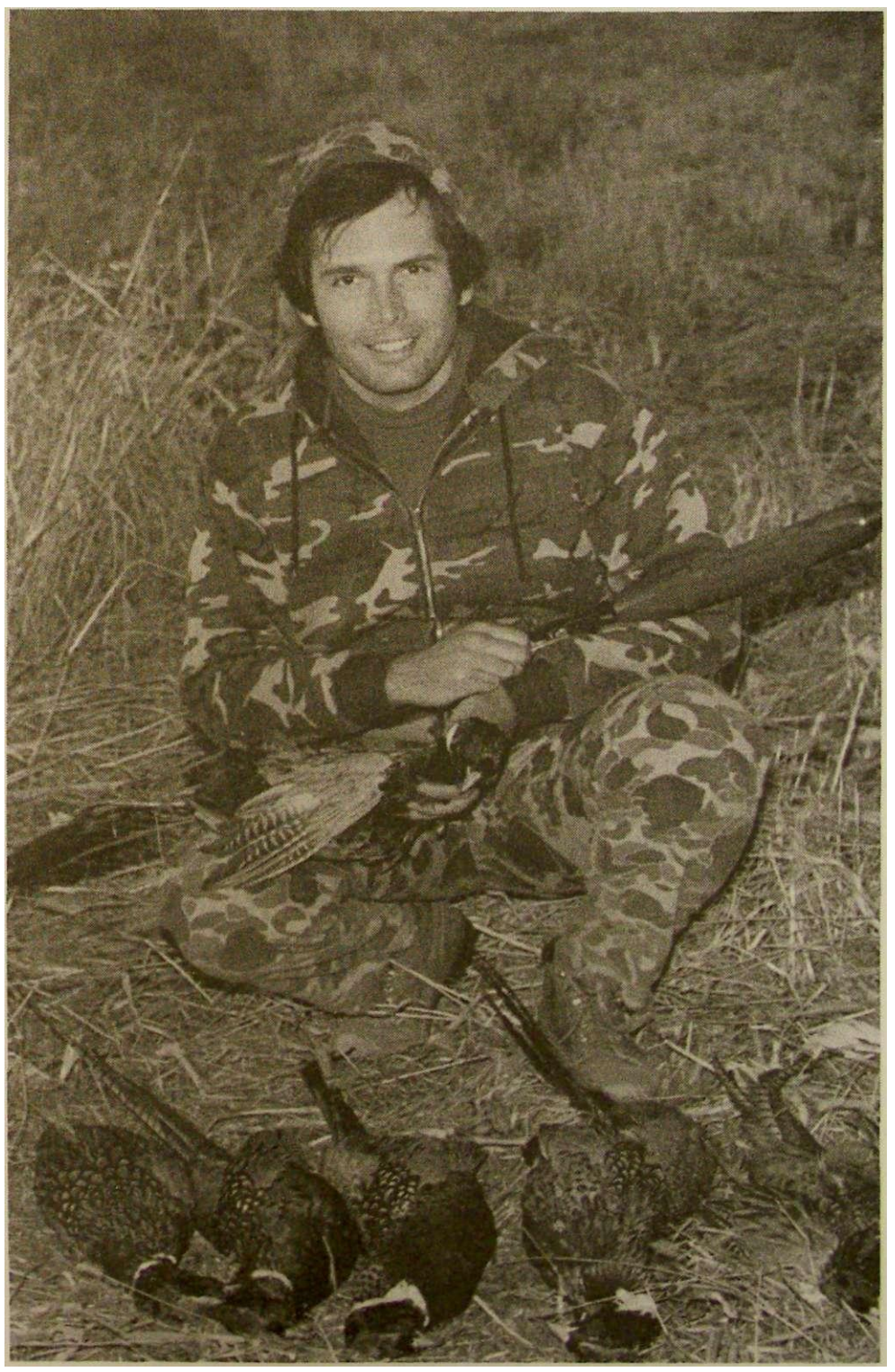
Powder is measured by weight in our loads. As such, little consideration is given to the volume a given type of powder may occupy. If, for instance, you insist upon using compression-formed hulls with a single-base powder and heavy payload, you will truly need to crush your loads closed. While a combination of volume and weight measurements, for our purposes, would be excellent, it is not convenient. As a handloader, it is better to become familiar with different powder types and how they occupy space, as well as their energy levels, relative to other powder types. Remember to follow tested load recipes and do not substitute components.

Shotgun chamber pressures, whether expressed in pounds per square inch (psi) or lead units of pressure (LUP), represent the maximum reasonable and allowable internal pressures for that gauge/load. What initially relieves chamber pressure is the movement of the mass, the wad and the shot, within the shotshell. If the load is somewhat heavy for use with a fast burn rate powder, the powder charge may generate gases that achieve higher pressure than recommended as safe. Since the amount of the powder can be regulated, we have control over pressure. Excessive pressure will wreck the gun's pattern, and might wreck the gun as well!

However, regulating the amount of powder only goes so far. As the payload weight increases, at some point the load is going to require a different powder; the powder's burn time must be extended to lower the peak pressure and spread it over & longer period. This will increase the velocity of the mass being propelled, and cause your lead shot to deform less due to setback.

The question always arises about why we should not use the slowest burn rate powder available and increase our speed to the maximum. Slow burn rate powders are truly slow. They need to push heavy loads and sustain a certain level of resistance or they will not burn cleanly or consistently. A light load combined with a slow powder is almost an automatic dud. Such a load might test well on a warm August day, but in the frost of late October, the load could well fizzle.

Outside temperatures affect all shotshells and on marginal loads, the effect is even more pronounced. Hot weather increases the burn rate of shotshell powders and cold weather, as I have mentioned before, reduces it. (Rifle shells are less affected because they fire at perhaps three times a shotgun's operating pressures.)



The Chinese ring-neck pheasant is a great American success story. Introduced into America in the late 1800s, the pheasant has flourished in our grassland states and as a pen-raised species. They provide hunting opportunities for hundreds of thousands of sportsman such as author Ride Sapp who shot a Remington 1100 on his trip to South Dakota.

If you do not believe that slow bum powders truly burn all that slowly, fire a heavy magnum load at night. You will see a heavy blue flame extending from four to six inches beyond the end of the barrel! These are burning gases. Even shotguns with long barrels, such as the 34-inch guns popular for waterfowl hunting and that are becoming more common on sporting clays venues, display burning gases when slow burn rate powders are used.

Effective steel shooting requires powder characteristics with medium-to-slow burn rates. There is no "give" to steel and the payload volume is higher for the weight. Given two pellets of the exact same size, one of lead and one of steel, the steel pellet weighs about 30 percent less than the lead. Therefore, if you have an ounce of steel and an ounce of lead, you will have a greater number - about 1/3 more - of steel pellets.

Every powder company publishes a brochure listing the most recent information and data concerning their powders. Powders change slightly over time, too, as engineers continue to study them. They evolve into different types of powders, different shapes, volumes, energies, and so on. In these guides, information is detailed on how to store and treat powders, too.

If you are new to reloading shotshells, you will want to read every instructional manual that you can find. You should also contact the manufacturers for the manuals that relate to their particular products. They are usually free or perhaps there is a nominal charge for shipping and handling.

Always remember that load alterations or substitutions are the fastest way to screw up an otherwise effective load. Altering components is similar to trying to increase engine power by substituting various types of fuels: kerosene instead of gasoline, for instance. So if you make an "unauthorized" substitution, do not blame the load, the components, the recipe or the manufacturers if the load fails to function.

A FEW NOTES ABOUT RECOIL

Recoil is unavoidable. England's Isaac Newton is famous for his third law of thermodynamics, which states that "for every action, there is an equal and opposite reaction." When we studied force vectors in school, we learned that the apple that hit Newton on the head causing him to jump to his feet in that "Eureka!" moment was apparently a large one, certainly when measured by its consequences. As a reloader, you are in a unique position to manage recoil, to tailor that "Eureka moment" to your own shooting preferences.

I was reminded of the effect of recoil on a sporting clays course not long ago when I needed an extra shell at the last station, A buddy fished in his pouch and handed me a 12-gauge load that I automatically popped into the bottom chamber of my Weatherby Orion SSC over/under. I nicely clipped the first of the report pair, a 25-yard left-right crossing bird with a load of 1-1/8-ounce Wolf #8 shot. When I pulled the trigger on the second bird, however, a longer range target that was zipping quickly away on a flat trajectory, the recoil hit my shoulder and cheek like a hammer. The second shell was a magnum load of #6 (illegal in competition) and it carried more than twice the recoil energy of my first shot. Fortunately for my friend, he could duck and run faster than I could recover and sprint after him.

Depending on the shooter, shotgun games such as trap, skeet and sporting days can take a toll on the lighter-framed shooter. The problem of course is recoil. Often, stepping from Jason Anders' 12-gauge to wife Michele's 20-gauge will make a dramatic difference in a spouse's attitude by the end of the day.

A careful rolling of your bottled powder may help remix it if it has been handled often.

There are numerous ways to handle recoil shock. There are soft cheek pads and thick, after-market butt pads, the newer varieties filled with gel-like substances. You can even add weight (an option more in favor with clay shooters, who either walk very short distances or use carts, than hunters who may walk miles in a day), because a heavier gun absorbs greater recoil energy than a lighter gun. Some shooters choose a semi-automatic as it dissipates a little recoil energy before it reaches your shoulder, using some of the energy of a shot to eject the spent hull and slide the next one into the chamber automatically. The expanding gas makes the gun's internal mechanisms work. Many shooters have their barrel's forcing cone lengthened and the barrel ported; both are pro-active steps that are said to reduce recoil (and improve pattern performance). The barrel porting certainly helps control muzzle rise and this makes any second shot smoother.

All shooters experience recoil, but all experience it differently. This is so because "absolute recoil" is different from "felt or perceived recoil." Absolute recoil can be determined mathematically. It is a precise, calculated energy transfer. Felt recoil cannot be determined mathematically though and is not a precise measure because it is completely personal in its effect. Felt recoil is what you experience and tell others about. It depends on adaptations to your shotgun (a thick recoil pad, for instance); the weight of your gun; your body shape and size (large, muscular people will probably - although not inevitably - report less recoil from any specific load than will smaller, leaner people); and possibly even on your mental mood at the time you take the shot.

Whether you are a weight lifter or a professional shooter, you must expect recoil and must have a plan to deal with it, because if you do not, it will manage you. Even experienced shooters are subject to flinching as their body learns to anticipate the shot and their muscles tighten prematurely. This can become so severe that it results in full-blown target panic, where the shooter literally cannot pull the trigger. Reverse or release triggers that fire when the trigger is released after being pulled are available for these few folks.

If anticipating recoil gets to be a problem, and you have already worked with after-market recoil-reducing devices, you can look to two additional options. Number one is to find a shooting coach who specializes in gun fitting. Sometimes a poorly-fitting gun stock will hammer you severely when one adjusted correctly for such personal dimensions as length of pull, cast-off and pitch will help your body deal with the recoil much better. Number two is to think about reducing the weight of your loads. A good clay shooter, for example, who drops from 1-1/8-ounce to 1-ounce loads will probably not notice a difference in scores at the end of the day. Study the load tables for loads marked "Light Recoil." And after all, it is the clay shooter rather than the hunter who pulls the trigger more, albeit usually on lighter loads.

General Julian Hatcher, formerly of the Springfield Armory, has suggested a formula for determining a gun's recoil. Hatcher, who worked mostly with rifles, considered that half of the energy created by a shell or cartridge, was expended in heat. Only about one-third was effectively devoted to propelling the cartridge down the barrel!

His rather complicated formula for recoil is [(E + 1.75P) (Mv) **T** W **T** 7,000]. E is weight of the "ejecta," the elements you shoot out the barrel: powder, wad and shot. P, the weight of the powder in a load, is multiplied by 1.75. Mv is muzzle velocity and W is the weight of the gun. Finally, the number 7,000 is the number of grains in a pound. The result is recoil energy in foot-pounds.

Just for fun, let's try this on a popular commercial load. Your 12-gauge, 8-pound Browning Gran Lightning is chambered for 3-inch shells, but you are shooting loads of 2-3/4s at Cherokee Rose sporting clays course south of Atlanta. It is a clear, cool day and the humidity is low. On the course chronograph, your 1-1/8-ounce load of Kent #8 lead achieves a muzzle velocity of 1,260 fps. The math says your recoil is about 20-1/2-ft lbs each shot. (Because I cannot do this math myself, I rely on a ballistics program from E. D. Lowry, former Director of Fundamental Research for Winchester-Western. This program is now widely available via the internet.)

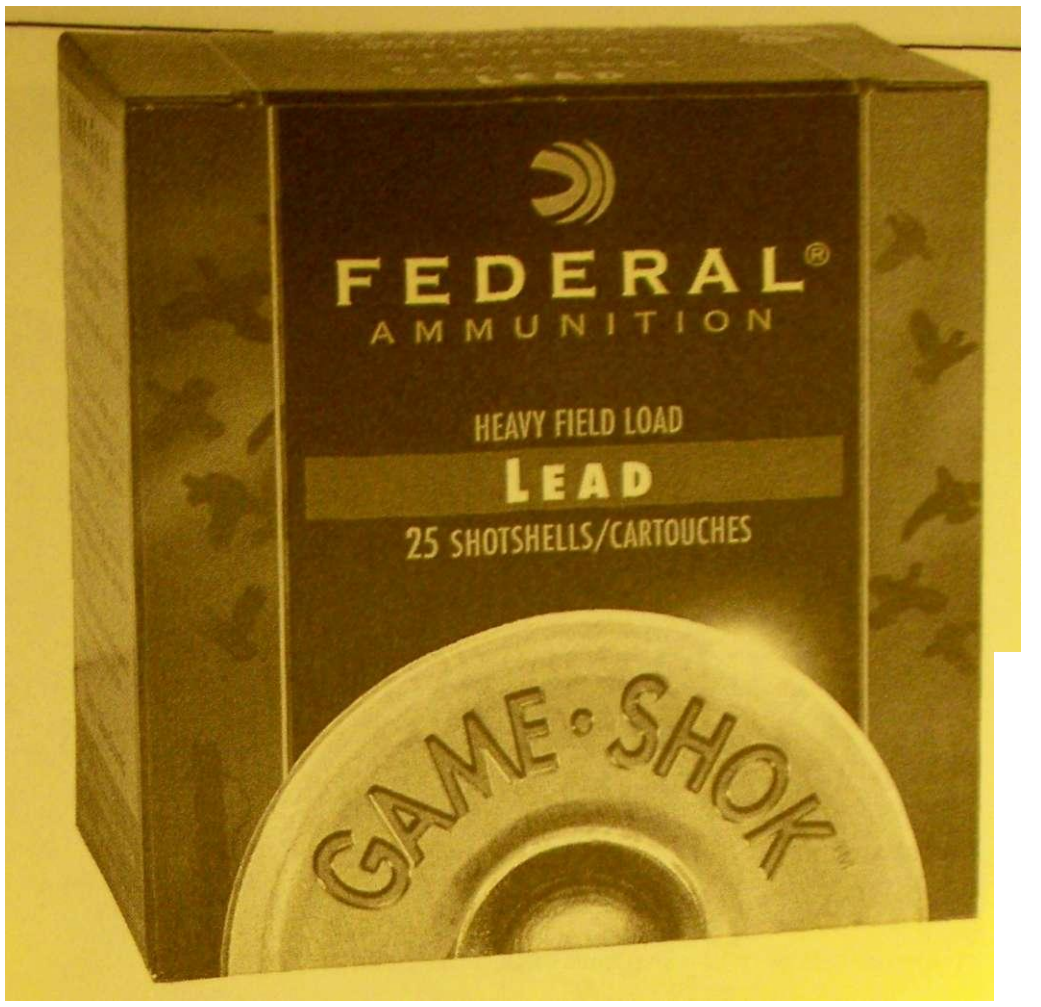
Again, this measure of recoil is just a statistic, a computation that deals with load and gun elements. What you feel and what your body actually responds to cannot be statistically calculated.

Chapter 4

SHOT

Lead has been the traditional material for shot virtually since the beginning, the invention or discovery of saltpeter as the basis of black powder A naturally occurring element, lead is relatively soft, malleable and abundant. It is also heavy; its molecular structure is amazingly dense. (Superman's x-ray vision could not penetrate lead!) This means that lead will absorb and carry energy very effectively, so if you can also make it fly effectively, it works superbly as a projectile.

Today's options are much wider than just lead though. In this chapter, we will discuss each of the popular and effective non-toxic pellets.



With a little handloading practice, you should be able to replicate the quality and consistency of components packed into any commercial load. Your reloading shot, powder, primer wads and cards are generally the same used by the largest manufacturers.

How Lead Shot is Made

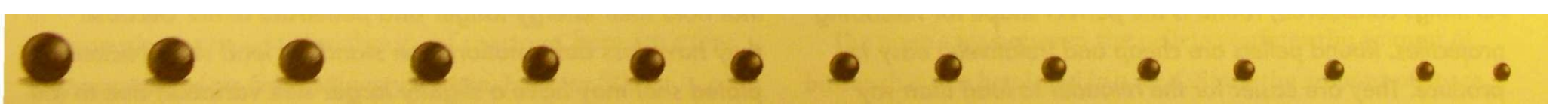
The first step in building lead balls for shotshells is to haul lead ingots to the top of a 100-plus-feet-high "drop tower" where they are then melted and poured through a sieve. The size of the holes in the sieve corresponds to the shot size needed. As the molten lead drops into a vat of water at the base of the tower, it cools and hardens. (An alternate manufacturing method called the "Bleimeister process" uses a very short drop of about one meter into hot water for lead or bismuth, thus miniaturizing the shot building operation.)

This process is both highly scientific and a true primitive art form. As liquid lead seeps through the holes, it drips, and the drips form drops and the drops are more-or-less round. Not perfectly round, but close enough. What makes the molten lead form round droplets instead of square drops or dissolve into molecular rain is a property of liquid called surface tension. Surface tension is a measurable cohesive force between the individual molecules inside and on the surface of the droplet, which is opposed by equal air pressure on all exterior surfaces.

After the lead droplets *cool* and harden sufficiently, they are rolled down a series of carefully spaced plates in a quality control measure that you can think of as a "roundness test." Round pellets are propelled past carefully measured gaps between the plates by the force of gravity. Out-of-round droplets fall through the gaps and are re-melted. Very little goes to waste in this process. The almost perfectly round pellets are then usually coated with graphite. This reduces the surface friction when they are in contact with other pellets or are pouring through measuring instruments.

Traditionally, lead pellets have contained both arsenic and antimony. Arsenic is valuable because a tiny amount, about one-half percent of a shot pellet's total volume, apparently increases a lead droplet's surface tension. This makes the resulting pellet harder - a scientific curiosity, because arsenic (atomic weight 74.9) is much lighter than lead (atomic weight 207.2).

Antimony (atomic weight 121.75) is a non-toxic element that, at a minimum, is used at about the same level as arsenic, and for the same purposes in lead shot: to increase surface tension. This increases a drop of lead's propensity to cohere as a sphere rather than some oddly shaped glob. Standard dropped shot has as little as one percent antimony while chilled shot (shot which is cooled as it fall), often contains three to four percent antimony and hard, magnum shot contains five to six percent.



Today's standard options for shot that will successfully tackle any shooting task are wide and not only include sin (from tiny \rdshot and #9 to hefty buckshot pellets), but composition as well (lead, steel, bismuth and various tungsten mixtures).

For some reason known only to the gods of chemistry, the amount of alloy in smaller shot is usually higher than the amount in larger shot. Because lead is purchased in large, heavy ingots in a pre-mixed state, and some percentage of the first drop is recycled, any particular pellet may differ slightly from any other pellet or from the dropped load as a whole. Nevertheless, a balance is required in the manufacture of shot as too little antimony (or arsenic) produces soft pellets while too much yields harder but excessively brittle pellets.

SPEAKING OF "ROUND"

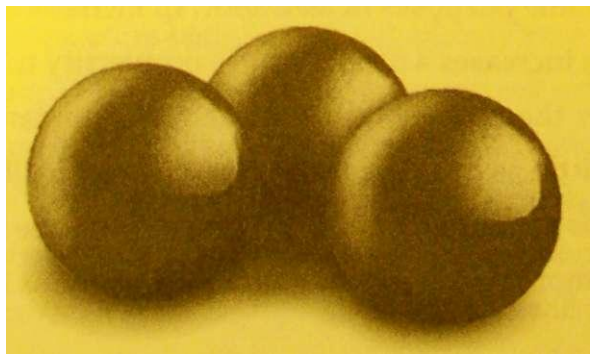
When molten lead falls through the sieve into the waiting water, its surface tension and the equal, surrounding air pressure ensure that it is round. This is a law of nature.

Round does not fly well, however.

Aerodynamics is a human endeavor based on natures principles. These principles suggest that there are several shapes (oblong and spherical, for instance) more efficient as projectiles than spheres. However, to produce other shapes and sizes in the enormous quantities and at the low cost needed to supply the world of shotgunning, and then to orient them correctly in the shotshell for best flight characteristics would require a whole new (read "expensive") approach to shotshell design and materials processing.

Although it is easier to push a needle through almost any solid matter than it is a marble or a small BB, spherical pellets have proven for years that they can get the job done. If pellets remain perfectly spherical and pressure on the pellet remains proportional on each side, the pellet flies true and straight with a load of energy for penetration.

If a pellet becomes deformed during the firing process, perhaps because of the crushing setback when the powder ignites, or because the wad is defective or the shot scrapes against the barrel, air pressure will not be proportionally distributed around it. The half that faces the target will experience higher pressure and the opposite half will experience reduced pressure. Scrapes, dents and flat spots on pellets cause them therefore to make continual mid-course corrections, and this is not usually in the direction of your intended target.



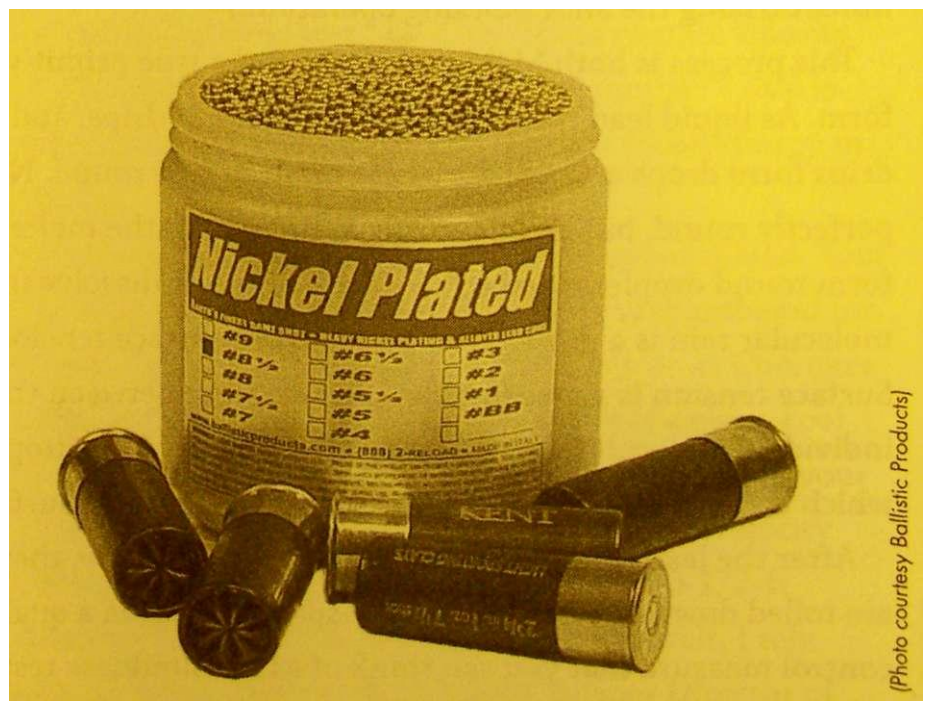
All things considered, round is the perfect shape for reloading projectiles. Round pellets are cheap and (relatively) easy to produce. They are easier for the reloader to load than say oblong-shaped pellets and if they are not deformed at setback or in their flight through your barrel, they fly true.

Deformed pellets waste energy and become flyers, ending up behind and on the outside fringe of a pattern. Because softer pellets deform more than harder, high-antimony magnum pellets, their pattern is usually wider. While this is fine - indeed, it may be excellent - for close targets and skeet shooting, an extra-wide pattern often causes you to miss a duck or sporting clays crosser at 45 to 50 yards. It would not be an appropriate trap load either, because even a full choke cannot fully compensate for the spreading ability of soft, cheap shot.

PLATING

Lead shot is available with a thin coating of either copper or nickel. While copper is not much harder than lead, it was the first metal used extensively to "hard-coat" lead, perhaps because it was easy to work. After all, because it is soft and colorful, copper may well have been the very first metal that mankind "tamed."

Winchester developed "Lubaloy" copper-coated shot in 1929 and marketed it aggressively to hunters on the theory that harder pellets held a much better pattern because they retained their spherical shape better. The company claimed that copper prevented lead from fusing and was more "slippery" than lead, thereby promoting improved pellet flow through the barrel.



Nickel-plated lead shot is available in sizes from #2 to #9. The non-porous nickel plating process produces hard round pellets that hold their energy longer and penetrate better because they have less deformation than standard lead shot. Nickel-plated shot may have a slightly larger size variation due to the heavy plating process and reloaders should expect that the number of shot in a load may vary if this shot is used*

As a youngster, I remember listening to Hie call of wild bobwhite quail in the evening. It was a beautiful and haunting sound and even today it reminds me of an era without air conditioning. Wild coveys are difficult to find in the South these days. Although many causes are debated, the one certifiable reason is loss of habitat and a farm economy that places less emphasis on stewardship af the land them it does on wringing every last dime out of the dirt. Nevertheless, hundreds of lodges and shooting clubs such as Quail Creek in south Florida have preserved the birds and this hunting tradition. In lead, choose #7- *1/2 and #8 with open chokes for these small, fast birds.*

Still, even though many thousands of hunters swear by it, there is only anecdotal evidence that copper improves lead shot performance. Copper may be nothing more than a marketing ploy, a thin coating that makes shot "prettier" rather than essentially increasing its functionality. Nevertheless, for those so addicted, Remington and Winchester offer high velocity, copper-plated upland game loads.

Nickel-plating, however, does change the hardness of shot, even though, like copper, it glazes pellets with only a very thin coating. Some writers have referred to nickel-plated lead shot as the "ultimate game pellet" because of its increased energy transfer and hence penetrating ability. Fiocchi says that its nickel-plated loads produce denser, more consistent patterns with fewer stray pellets and increased effective range and penetration than non-plated shot.

Steel shot is often coated with copper or a zinc alloy. The purpose of coating the steel is a little different from that of coating lead. Exposed to the slightest moisture content, steel ***shot*** quickly rusts when it is contained inside a paper or plastic shell, so coatings act as rust inhibitors. Since you may be curious about the additional price of coatings, here are a few comparable ***prices*** from Midway USA in January 2005;

* an 11-pound bag of #6 BP1 nickel-plated lead shot cost $23.90 or about 134 per ounce,
- a 3.5-pound bottle of #6 Knight Red Hot magnum lead shot cost $8.59 or about 15<t per ounce, as opposed to a couple of non-lead alternatives:
- a 10-pound bag of #6 "polished and annealed" BPI steel shot cost $16.95 or about 10<t per ounce and
« a 7-pound bottle of #6 No-Tox Bismuth cost $92.99 or about 83<t per ounce.

Buffering

The purpose of buffering is a bit different than plating, and if you are not careful, buffering can cause unexpected load pressure difficulties. When you buffer a load, you fill the spaces between the shot pellets with a lightweight material that has a long shelf life. This buffering material is supposed to soften the setback force, prevent it from exerting a crushing impact on and changing the shape of soft pellets. The perfect buffer will also carry its cushioning action through the forcing cone and up into the choke. This provides the pellets with a better basis for the "liquid physics" required for the shot mass to move smoothly through the choke constriction.

The open area between the pellets confines the amount of buffer that can be placed in a load. Since the amount of space varies when different pellet sizes are used, it is impossible to state, in general terms, the exact amount that will be needed.

Other factors such as the amount of shot in the load, the density of the buffer material and the method used by the handloader to insert the buffering material also come into play.

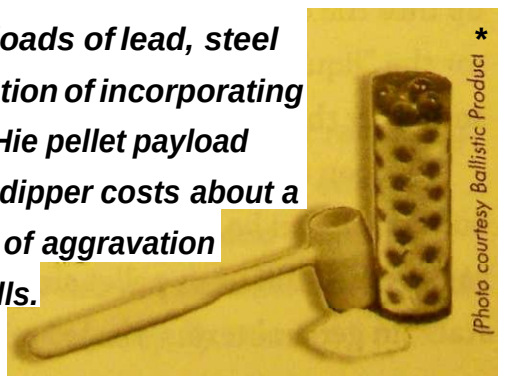
Because so many elements are involved, from air pressure to primer type, the pressure differences generated in certain loads by adding a buffer do not follow a general rule. Some loads reflect only very small changes when buffered. However, you should buffer only those loads that have been tested with buffer. Always assume a rise in chamber pressure whenever adding mass to any load.

A note of caution: Searching for the best buffering material, some reloaders have used finely grained substances like flour, salt and cereal products. Actually, flour is entirely suitable if it is shot immediately on a dry day; but flour tends to absorb moisture, pack down hard and increase the curve of pressure. And singed flour inside your barrel requires extra brushing before the solvent patch can be run through. I cannot recommend its use, ever, because it can ruin your gun. Stick with the buffering additives listed in recognized load data.

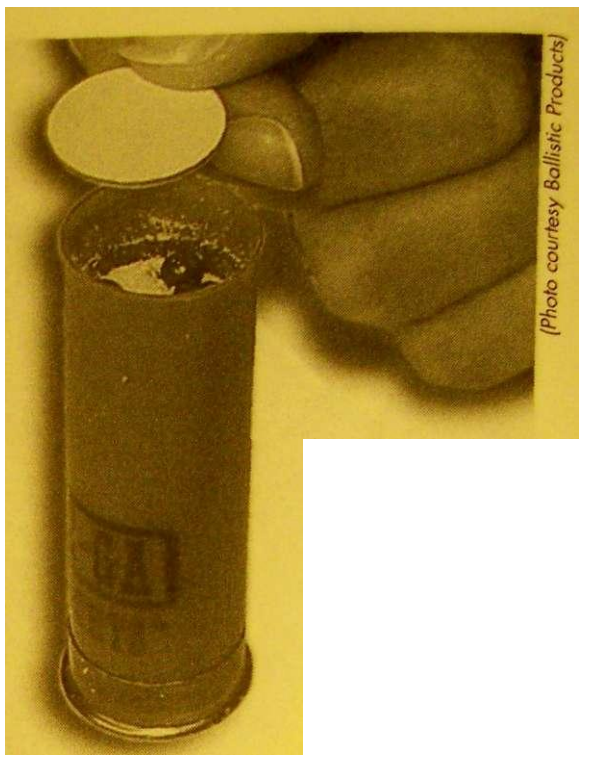
Many reloaders believe that spraying their pellets with a dry lubricant helps them crowd through a choke and exit the barrel a bit easier. This cannot hurt. Although the original manufacturer coats most lead shot with a graphite powder, lead and other pellets such as steel and bismuth, may actually benefit from a similar application.

What about buffering steel shot? The resiliency of steel causes pellets to bounce when the powder ignites. Energy is exchanged between pellets rather than absorbed through deformation like lead shot. Steel shot buffers contain ingredients that deaden these interactions, cushion the shot and reduce the wave of energy passing through the pellets during the initial thrust of a burn cycle. Most steel shot loads are buffered since the advantages of doing so are essential for high performance.

Large pellets such as T or F shot sometimes do not disperse evenly in the base of a shotcup due to the wad's interior space constriction. Thus, one pellet may occasionally support the strain of the entire load. When this happens, it places extreme pressure on the base of the wad. When using large pellets (T, F, BBB or even BB), consider placing a thin cardboard or wool felt in the base of the wad to act as a reinforcing cushion, if there is room. This will allow the pressure of setback to spread over a wider area and ease the strain on the base of the wad.


(Photo courtesy Ballistic Products)

High performance magnum loads of lead, steel and bismuth often have the option of incorporating a buffer* Pour the buffer into Hie pellet payload just before crimping. A buffer dipper costs about a dollar and will save you a lot of aggravation from spills and overloaded hulls.


(Photo courtesy Ballistic Products)

Placing an overshot card on top of buffered pellets in a load of buckshot before the shell is crimped. The card keeps the buffer - tiny, ground-up and irregularly shaped granular pieces of plastic - from sifting out of the shell.

Some reloaders find that placing an overshot card wad on top of a steel shot load holds pellets within the shotcup for the journey up the barrel. This reduces the possibility of a pellet getting out ahead of the wad and scouring the barrel. Any thickness .030-inch and under will serve the purpose and get out of the load's way upon exiting the muzzle.

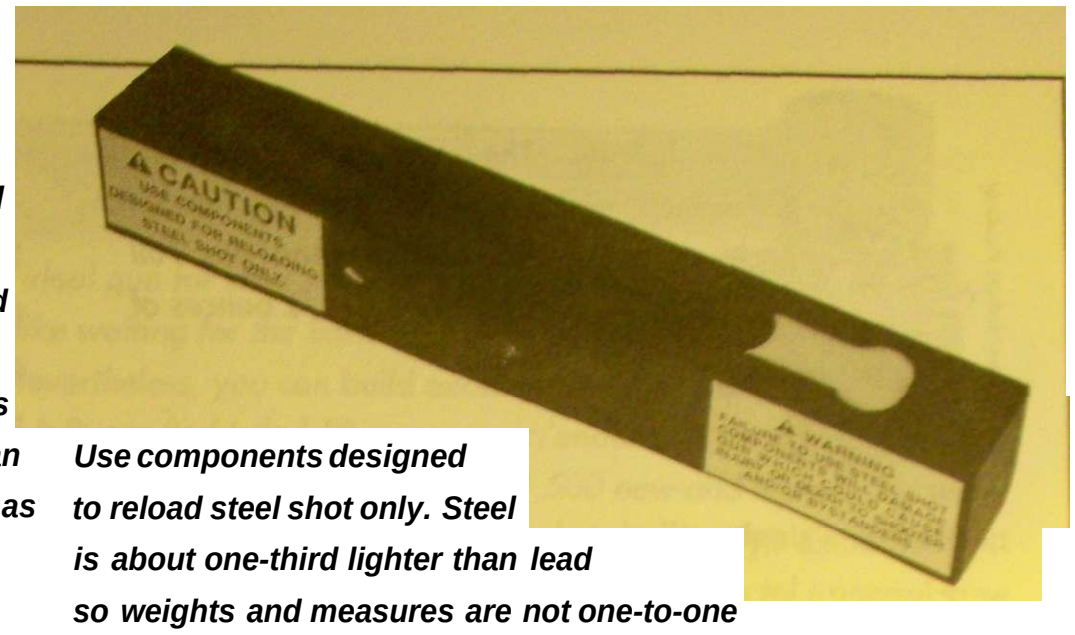
Modern Alternatives to Lead

We have known that lead was a poison for many years. Historians speculate that the fall of Rome was due, in part, to the prevalence of lead pipes used to carry drinking water to the cities of the empire. (Incredibly, some of these lead pipes are still in use, bearing the imperial seal of a Caesar!) In humans or animals, lead poisoning is not pretty. It induces muscular weakness, cold sweats, vertigo and vomiting blood. Unlike a vial of arsenic, its debilitating effects act slowly, but they inexorably lead to a miserable death. Waterfowl poisoned by lead allow their wings to droop unnaturally, refuse to fly when pressured, fail to vocalize and seek isolation rather than the social atmosphere of the flock.

I was a member of the US Fish & Wildlife Service in the late '70s and early '80s when the deleterious effects of lead shot on waterfowl were becoming widely understood and generally, if grudgingly accepted. Although I am not sure it is still true (more's the pity), most Service employees were outdoorsmen then, hunters, campers, fishermen and dedicated conservationists. While they needed to be convinced about the hazards of lead shot in the flyways, they were genuinely concerned with unusual causes of avian mortality and the performance of steel shot in hunting loads. At that time, steel was the only commercially available alternative to lead.

Conservationists inside and outside government recognized, however, that lead shot was not the only problem affecting

Not only has on intense study of steel as an effective waterfowl pellet been completed during the past 20 years, but powder companies have responded with safe and effective propellants for the new steel. Today, many students of shotgun ballistics believe that with careful selection, you can build steel loads that are just as effective as lead loads.



Use components designed to reload steel shot only. Steel is about one-third lighter than lead so weights and measures are not one-to-one equivalent. Peel the labels off the charge bars at your own risk, because a mix-up could be disastrous.

waterfowl breeding and survival - and many did not believe that it was a major factor, either. Without a doubt, unnatural agricultural chemicals were (and because of political pressure, still are) excessively prevalent in the environment, especially in rural areas where waterfowl live and breed. Although DDT has been effectively addressed, many other harsh pesticides, herbicides and fertilizers remain far too common in run-off from farm fields and even suburban lawns.

Perhaps one of the factors initially causing many sportsmen to reject non-toxic alternatives to shot was that anti-hunters quickly jumped on the blame-wagon. They even questioned the continued use of lead weights on fishing line, which scientifically may or may not be significant, but for the anti-gun, anti-hunting, anti-vivisection, anti-everything crowd, this was, for a while, a perfect vehicle to promote a non-consumptive, vegetarian, animals-are-people-too agenda.

Nevertheless, we hunters were fully aware that every time we pulled the trigger with our scatterguns, we launched an average of 300 or so pellets. We fully understood that we only picked a few of them, perhaps a couple dozen, out of a hard-hit duck or even a turkey when we gutted and plucked it, and there is nothing worse than biting into pheasant breast and crunching a #6 lead pellet. (Of course, we rarely dissected the head or

Although waterfowl and their predators may ingest some of the lead shot we leave behind in a marsh, following a five-year study, the US Fish & Wildlife Service recently found that no lead leaches into the drinking water horn our shooting ranges. Neither is there a significant trace of lead in the air.

The pre-slit, cushioned MG42 is designed for magnum steel and bismuth shotshells. Full capacity is h 1/2 ounces of lead.

neck where a single well-placed pellet can kill.) Obviously, we were leaving a lot of lead in the marsh, in puddles along the way and, sadly, aquatic birds ingested some of it. Even when we picked lead out of a dead bird, we tossed the pellets into the garbage and they went directly to a landfill.

An '80s study from Stanford University estimated that we waterfowl hunters left behind 1,400 lead pellets (Somebody out there was not following through!) for every duck or goose we killed. The same study also claimed that a single pellet swallowed with food or taken as grit and deposited in a bird's gizzard introduced sufficient lead into its bloodstream to cause it to die.

This same Stanford group - David Dobkin, Darryl Wheye and Nobel laureate Paul Ehrlich - suggested that between 1.5 and 3.0 million birds, waterfowl and the raptors that preyed on them, were killed every year by lead shot they picked up in the environment. In the Central Flyway where I worked, such an educated guess was initially met with skepticism. Since then, mortality estimates have been endlessly debated. As separately funded studies indicated similar findings though, sportsmen themselves began searching for non-toxic alternatives to lead shot and to the ballistically inferior steel loads then becoming available.

(The US Fish & Wildlife Service, in cooperation with professors from Virginia Technical University in Blacksburg, Virginia, recently participated in a five-year study of the effects of lead deposited on shooting ranges. Preliminary findings suggest that although tons of lead shot and bullets remained on the sites studied, NO significant trace of lead could be found in the air and no lead was leaching into the subsurface water table.)

Steel shot seemed like it might very well be the answer to lead-related waterfowl and raptor mortality, but it almost immediately proved problematic. Steel is not found on the periodic table of elements, but its essential ingredient is iron, which is element #26 with an atomic weight of 55.8 compared to lead (element #82 weighing 207.2). A treated alloy of iron, steel is harder, but one-third lighter than lead and only 65 percent as dense. The flight characteristics and energy transfer properties of steel shot (to hunters, this type of energy essentially means penetration) were inferior to what was expected from conventional lead shot. Steel accelerated quicker to muzzle velocity, but it also slowed down significantly faster. In addition, by experimentation, hunters found that they often needed to drop down a size (sometimes two sizes) to achieve similar results and at ***closer*** range so it took #4 or #5 steel to replace #6 lead. Perhaps if we had begun our shooting careers with steel rather than lead, we would have been happy with these results.

Here is an example chosen at random.

A 2-3/4-inch Winchester one-ounce field load (#XU12) contains 223 pellets of #6 lead in a plastic hull. At three feet from the muzzle, this load is driven at 1,300 fps, but by 50 yards, its velocity has fallen to 620 fps. At 145 yards, our programs suggest that it still has the ability to put your eye out.

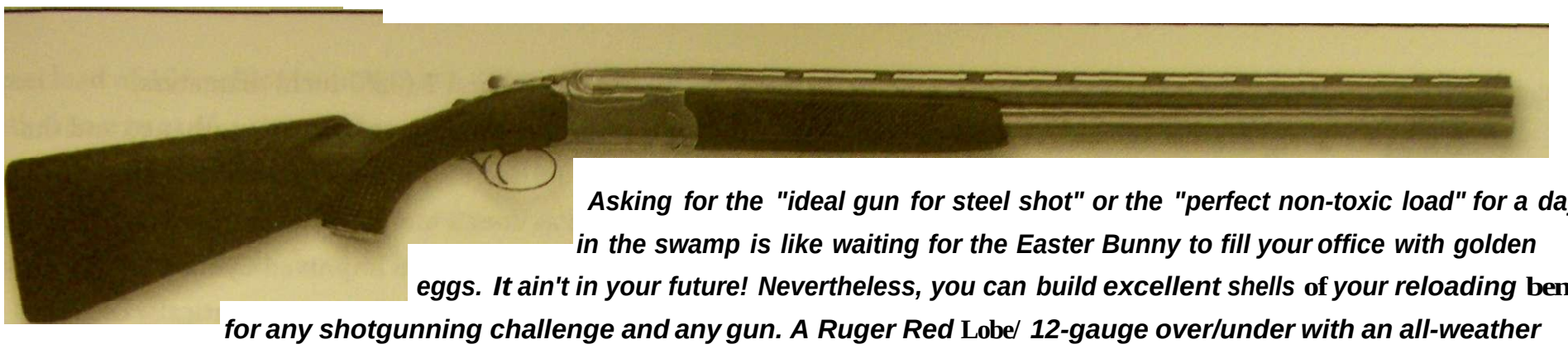
A comparable 2-3/4-inch Winchester one-ounce field load (#WE12) contains 315 pellets of #6 steel in a plastic hull. At three feet from the muzzle, this load is also driven at 1,300 fps. By 50 yards, its velocity has fallen to 480 fps though and it can pierce your skin out to only 100 yards.

Several writers credit steel shot for the return of the 10-gauge. Their argument is that large steel pellets, even polished steel pellets, do not flow very smoothly through smaller bores or even through the 12-gauge. Thus, steel shot caused the more open 10-gauge to recover from the oblivion of history.

This could be true, because every aspect of shotgunning we study deals with tolerances in thousandths of an inch. However, the nominal SAAMI difference between a 10-gauge bore at .775-inch and a 12-gauge bore at .729-inch is only .046-inch (less on the increasingly common backbored barrels with lengthened forcing cones). That dimension is about 1/20-inch and you need to try to narrow down that minute measurement on a ruler. I, for one, am not convinced that 1/20-inch difference in bore size allows steel pellets to pass through more easily in any significant, measurable manner than lead if both are equally polished, coated and buffered, regardless of the "dynamic flow" of the metallic pellets.

So is there a "best" shotgun for steel? That may depend on your preferred load. If you shoot heavy 1-1/4- to 1-1/2-ounce steel loads in your 12-gauge, you are probably not shooting most efficiently and certainly not if you are trying to shoot long shots with a Full choke. Open the choke or switch to a 10 gauge. Conventional wisdom says the larger 10-gauge allows steel shot to attain maximum speed and it is true that on the flyway as on the highway, speed kills. Your 12-gauge is generally considered the secondary choice for heavy steel loads.

If you use a gun with a 3-inch chamber, shoot 3-inch loads of steel. The 1/4-inch difference between the 2-3/4-inch hull

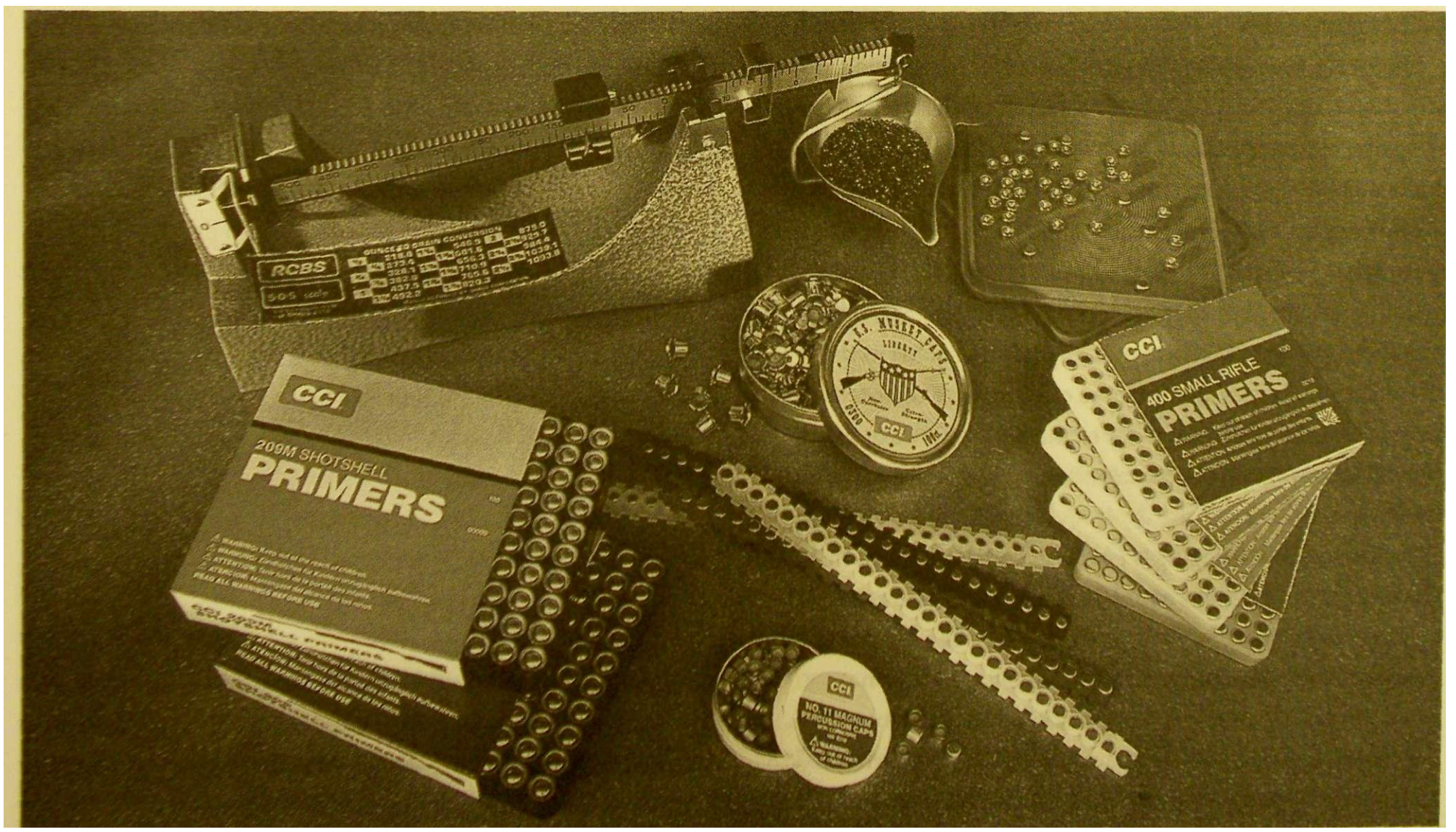


Asking for the "ideal gun for steel shot" or the "perfect non-toxic load" for a day in the swamp is like waiting for the Easter Bunny to fill your office with golden eggs. It ain't in your future! Nevertheless, you can build excellent shells of your reloading bench for any shotgunning challenge and any gun. A Ruger Red Lobe/ 12-gauge over/under with an all-weather synthetic stock, 3-inch chamber and corrosion-resistant, low-glare finish costs about $1,500 new and is available with pistol- or straight-grip. This gun has a very good reputation and will put a lot of ducks and geese on your family's dinner table.

and the longer chamber allows a "jump space" before the load hits the forcing cone. While this small space is important with lead, when you shoot steel, some barrels tend to jar the pellets hard upon entering the forcing cone. (Guns with long forcing cones, an inch and a half, for instance, rather than 5/8 inches, are less prone to this phenomenon.) The result of such jarring is that bouncing pellets create a chain reaction that ultimately disrupts your pattern. The choke cannot make everything right again if the load has been battered early in the firing sequence. This is something to consider if you experience poor patterns with steel shot. Try the longer shell, which properly fits the chamber.

It is apparently true that steel (or other hard shot such as tungsten-iron which seek to improve on lead) can scratch the interior of older shotgun barrels and should never be used with Damascus-barreled shotguns. Modern barrels however, on the diamond pyramid hardness (DPH) scale, score between 115 and 117. For comparative purposes, the standard acceptable hardness for today's steel shot pellets is 90 DPH. It will surprise many shotgunners to learn that steel pellets used for shotshells are almost pure iron, rated as soft and so the term "steel" is actually a misnomer!

After all is said and done, I believe that the bottom line on steel is not what we commonly read or hear over a beer at the hunting shack. With practically 25 years of development, today's steel shot loads can be as effective in energy delivery as any other type of shot you can load if you shoot within its effective killing range. (And "killing range" is a very sore subject with industry insiders whose observations lead them to believe that the average shotgun hunter cannot hit a moving target



Every shell you load must conform to your loading recipe. Even such seemingly small components as primers must not be interchanged, because the pressures inside your chamber and barrel will deviate from what you expect and, nine times out of ten, that will not be a good thing.

A single stage reloading press is recommended for loading non-toxic shot and hunting rounds. The MEC Steelmaster is set-up just for steel. Be aware when you buy a press to ask about its capabilities for other-than-lead as you will need special plates and bushings for non-toxic shot.

beyond 25 or 30 yards, certainly not consistently!)

One problem with steel shot is that it will rust. Therefore, steel pellets must have rust protection, and handloaders need to properly store steel both in the bag and in the shell once it is loaded. Whether your hulls are paper or plastic, they are not airtight or water-repellent, and rusty pellets will continue to rust. Extensive or continuing corrosion can actually bind pellets together inside the shell. An unyielding glob of steel shot bullying its way down your barrel is guaranteed to tear up something. Just like milk, steel pellets have a natural expiration date. Do not use rusty pellets unless you are indifferent toward your shotgun and your shooting performance.

"Bridging," describes an in-barrel steel pellet scenario that, while rare today, can occasionally be seen in older guns. During firing, the payload of shot and wad must pass through the choke constriction at the end of the barrel. When steel shot pellets are a little large for the particular gauge used, the shot can sometimes form a connecting bridge of pellets, perhaps spanning the width of the bore or even more. The barrel will give first, usually in the form of a ring bulge or score in the choke area. Only very specific sizes can converge to become greater than the inside diameter of the barrel. Three or more pellets locked together in a bond of rust - bingo - new barrel for Christmas!

Mathematically, bridging is a ratio of the shot size to the diameter of the bore, but in practical terms, it means that the handloader must not exceed recipe sizes. The following parameters are only concerned with bridging and are not related to size recommendations based on shell performance:

For the 10-gauge, steel shot no larger than #F, which is 0.218-inch diameter. Many 10-gauge guns benefit from extending the forcing cone and dropping back in choke constriction to no more than Modified to assist this larger shot.

The maximum size steel pellet for the 12-gauge is somewhere between BB (0.18-inch) and T (0.20-inch) diameters, depending on whether the forcing cone is lengthened and the barrel overbored. Both of these modifications help steel flow through the barrel as does a more moderate choke constriction than Full, perhaps Modified and Improved Cylinder.

Using larger steel shot sizes will not automatically cause a problem with your gun, as bridging is a factor of probability. Larger pellets increase the risk of damage while smaller pellets decrease the risk.

Although I have repeated the often-heard advice to automatically move one to two sizes larger than lead when shooting steel, I think you should realistically follow such advice cautiously. Every year, reloaders have more options in shot, wads and shells, better recipes and more expertise available. Increase the size you choose to shoot with care. It is said that a healthy duck takes about three foot-pounds of energy for lethal penetration. That truly is not much and if you use common sense when loading and shooting, today's steel will do the job just as well as lead.

When handloading steel, be advised that experienced reloaders do not recommend using a progressive machine. These presses are designed for clay target and upland bird shooters who pull the trigger with small shot many times more than a hunter who needs to shoot steel. Progressive machines do not meter large steel shot well, nor are they suitable for the multiple levels of wads necessary for most steel loads. Automated powder or shot drops are a sure sign of impending trouble, because you will probably have to work the crimp several times for a proper seal. If you have chosen a single-stage press for steel and/or hunting lads, you have chosen well.

What about comparing lead and steel when developing loads? Here is a quick example. According to Kurt Fackler and M. L. McPherson, who authored an earlier edition of this book, the traditional 12-gauge shotshell for duck hunting was a 1,300 fps load of 1-1/4 ounces of #4 lead. There are 168 lead #4s in 1-1/4 ounces and 240 steel #4s. If your goal is an equivalent pellet count for reloading, since shot size is the same, that is 72 "extra" steel pellets. An equivalent pellet count of #4 steel however only weighs 7/8-ounce and that is only adequate for a mature mallard if it is a close shot, perhaps already flaring into your decoys.

As you switch to steel, you can retain energy by moving up a size or two, but that decreases the density of the shot cloud. However, a slightly larger pellet and lighter load, 1-1/8 ounces of #3 steel gives you 166 pellets and you can achieve about the same pattern density with it as your old #4 lead.

Ballistically, the lead load, fired at 1,325 fps, runs out of gas (pellet energy below 2.0 ft-lbs) at about 53 yards. A #3

steel load of 166 pellets launched at 1,300 fps runs out of lethal energy at 41 yards. This means the loads are not nearly equivalent. If, however, you can safely boost your steel #3 load to 1,425 fps, it will retain lethal energy out to practically 50 yards, only three yards short of lead's effective range.

Bismuth

Bismuth is close to lead in weight and significantly heavier than steel. At the atomic level, it is actually a little heavier than lead, 208.98 to 207.2. According to Bismuth Cartridge, bismuth shot is 97-percent bismuth and 3-percent tin. Adding tin reduces the pure elements tendency to brittleness.

Using bismuth began as a gleam in the eye of a twentieth-century Canadian named John Brown. Brown took bismuth shot through the development stage and into the patenting process, but his work was rejected by the major ammo companies, perhaps because he was a little early or perhaps because bismuth is much more expensive than steel. His efforts however came to the attention of small-gauge enthusiast Robert Peterson, owner of Peterson Publishing Corporation in California, who subsequently provided cash, contacts, publicity and eventually management and ownership.

Today, Bismuth Cartridge owns the patent rights and manufacturing processes for bismuth. Bismuth licenses Eley in Sutton Coldfield, England, to do the manufacturing. Bismuth Cartridge imports the finished shell for US sales. Under its own label, Eley distributes bismuth in all gauges to other countries.

Bismuth is a non-toxic shot that is environmentally friendly. It was the first and, Bismuth Cartridge Company says, "the best" alternative to steel, approved for waterfowl hunting by the US Fish & Wildlife Service and Environment Canada. Next to had in the periodic table of elements, bismuth is nearly as dense as lead and much heavier than steel.

Eley uses the modified short drop Bleimeister process to make the smaller size shot, #3 through #7. Bismuth Cartridge spokesman Dan Flaherty says that larger size shot than #3 must be die-cast because in larger diameters, the bismuth alloy tends to tear-drop and, even in its short 10-year history, bismuth loads have gained a reputation for including a fair number of out-of-round pellets. This can obviously make for some ugly patterns.

To achieve good patterns, bismuth loads require larger payloads and the care provided by a specialized wad column. Larger loads need extra room and this often necessitates hunting style wads that do not have cushioned sections. Without a cushion, load formulas often offer buffering options.

Current applications for bismuth other than your shotshells are in cosmetics and pharmaceuticals. It is the major ingredient for instance of Pepto-Bismol®, which as bismuth subsalicylate settles upset stomachs and relieves diarrhea.

If you wish to see what bismuth is like (natural bismuth, that is) you can buy 100 grams of 99.9 percent pure bismuth pellets for $86 via the internet from companies like Advent Research Materials Ltd. in England at www.advent-rm.com. And you will not have to worry about handling it because unlike lead, bismuth is non-toxic and non-carcinogenic. In fact, bismuth shot was the first alternative to lead and steel to be approved by the US Fish and Wildlife Service (fully approved as late as 1997) and Environment Canada.

The folks at Bismuth Cartridge say this about the benefits of bismuth, which produces heavy, soft shot, compared to steel or tungsten-iron:

- That it hits and mushrooms, delivering about the same energy as lead, and thereby penetrates sufficiently to kill, but not so hard that it punches completely through flying birds.
- That since it is ballistically similar to lead shot, you do not need to re-learn leads or sight pictures on moving targets.
- Since it is more dense than steel, a 12-gauge, 3-inch shell filled with #4 shot contains 44-percent more shot weight than tungsten-iron and 30-percent more than steel.
- That in a 30-inch circle at 40-yards, bismuth puts 40-percent more pellets on target than tungsten-iron and 38-percent more than steel.
- That the soft, dense lead-like qualities of bismuth mean that you can shoot it through older shotguns with fixed chokes. This you cannot do with tungsten-iron or steel, both of which are harder than lead. In fact, bismuth is one of the non-toxic shot systems approved for use by

England's finest, Purdey & Sons and Holland & Holland.

Because tungsten-iron is 10-times as hard as bismuth when measured on the Brinell scale of hardness, tungsten-iron shot is significantly harder than the steel in shotgun barrels. This means two things: first, that bismuth can be used with all barrels, not just those approved for steel shot and *second,* that bismuth can be shot safely through any choke (even fixed chokes) whereas tungsten-iron is only recommended for constrictions of Improved Cylinder (.010-inch) to Modified (.020-inch).

On the surface, bismuth may cost more per shell, but because it is so much more effective in the field with better on-target energy delivery at any distance than steel or tungsten-iron shot, it is actually very competitively priced.

Bismuth is the only non-toxic shot available in all bore sizes, including 10-, 16- and 28-gauge and .410-bore, not just the popular 12- and 20-gauge.

Bismuth shot is available for reloading.

In addition to the above, English shot manufacturer Eley notes the following regarding bismuth's attractive properties in relation to other non-toxic shot possibilities:

Steel shot, which is really soft iron, is non-toxic, but has a decreased pellet striking energy due to its relatively low density (specific gravity) compared to lead or bismuth: lead is rated at 11.3, bismuth at 9.6 and steel only at 7.5. In addition, steel causes barrel wear, ricochets off hard surfaces and requires high-density plastic wads.

Tin shot is malleable and deforms upon impact, but has an even lower (7.3) density than steel. It necessitates the use of pellets two-sizes larger than the usual choice, with deep plastic cup wads or shallow fiber wads offering little cushion from excessive recoil. In relation to lead or iron, the raw material is expensive.

Zinc has better ballistic performance than steel, but unfortunately, it also is toxic.

Tungsten, according to Eley and Bismuth Cartridge, can be alloyed to a density similar to lead. The metal is extremely hard and expensive. It necessitates the use of deep, plastic cup wads and is still available only in a limited choice of loads.

Notes for reloaders: Bismuth is different and it loads different. Bismuth shot cannot be used with lead or steel load recipes or proportions. Bismuth shot has its own unique characteristics and ballistic reactions. To substitute recipes or pellet types is to sacrifice the advantage of using bismuth and thereby waste your time and money as well as one's personal safety. Use only bismuth-specific load recipes and components, no matter how insignificant they may seem. Interestingly, given the same amount by weight, bismuth shot produces higher pressure in a given load than does lead. You also cannot use steel or lead shot bushings in your loading press. Specialized bismuth shot bushings or charge bars (they are not expensive) are the only accurate volumetric way to measure bismuth pellets for loads. If you do not have specialized bars or bushings, you must weigh the shot charge on an accurate, calibrated scale or count the pellets individually.

Since bismuth loads are used in a range of hunting and shooting applications, there is a wide disparity of volume between various loads. Applications of filler wads will be less specific than you may have become accustomed to with steel shot loading. Use cork or felt filler wads as necessary to produce the proper shot column height for a good crimp. Filler wads are the only optional components in a load. Carefully follow the formulas for all components, including the wad/shotcup and when buffering.

Tungsten

Also called "wolfram," tungsten is another non-toxic, non-radioactive element used in the development of shot alternatives to lead. Whereas at 293 degrees Kelvin, lead has a density of 11.34 gm/cu cm, tungsten has a whopping density of 19.3 gm/cu cm. By comparison, bismuth and iron are relatively puny 9.8 at 7.86 gm/cu cm respectively. Another way to look at it is that, in its alloy state (Federal's tungsten-iron is 10.4 gm/cu cm), after it has become shot pellets, tungsten-iron is 94-percent as dense as lead and 32-percent more dense than steel.

So tungsten is harder and denser than lead. As a carbide it is so hard that it used for long-lasting cutting edges. These properties are both a terrific benefit and something of a problem for non-toxic shot manufacturers. Even in its alloyed state (no one shoots solid, pure tungsten), tungsten's ballistics are quite different from any other shot element, lead, bismuth or iron. (Steel is just iron on steroids: harder than lead, but less dense.)

Because tungsten pellets do not deform if they scrape against the barrel, its patterns are more centered which means you will kill fewer ducks with flyers. It also means that your estimated lead has to be more exact as the "shot cloud" will be more dense. Of course, this also means that tungsten poses problems for older steel barrels too and for choke constrictions greater than Modified (.020-inch).

To mediate these difficulties, manufacturers have cut the tungsten with other materials. EnvironMetal in Oregon, was the first company to promote tungsten as a possible replacement for lead when Dr. Daryl Amick invented Hevi-Shot. Eventually, the company developed an alloy composition of about **50** percent tungsten, **35** percent nickel and **15**

percent iron alloy. The nickel increases a shot pellet's corrosion resistance and makes it a little easier to work, while the iron promotes adherence of the molten metallic composition. To make Hevi-Shot, tungsten, iron and other metallic elements are powdered, mixed and compression molded (subjected to heat and pressure) like a diamond, to form shot pellets. The pellets are then coated, in the case for instance of Federal shot, with a zinc-steel composition and a rust inhibitor.

Eventually, after experimenting with numerous options, Amick's Hevi-Shot retained all of the velocity and deliverance energy of lead. Some hunters have suggested that if you spend time at the pattern board with Hevi-Shot, you will discover that you can drop down by as much as a couple shot sizes, and retain shooting effectiveness. Federal and other manufacturers essentially corroborate this assessment.

Do not expect that your pattern results will be the same with Hevi-Shot or other tungsten pellets as they are with lead though, because tungsten gives you denser patterns at 40 yards and does it without much choke. This property allows waterfowl hunters to back off from their normal Full choke to Modified or even Improved Cylinder. Another reason tungsten patterns more tightly is that the shotcup is traditionally thicker and this magnifies choke constriction. Modified chokes act like Full chokes. Federal has a patented six-petal wad, for instance, with three inner and three outer petals, thus preventing any contact between the tungsten-iron and your barrel.

Because raw tungsten is harder (and more expensive) than lead, it has to be cut with other elements. Pellet density is the delivery agent for striking force and penetration ability, or simply, kinetic energy. The formula for kinetic energy multiplies half of the mass times the velocity squared: KE * $(1/2\ m)\ v^2$.

Kent builds 12-gauge non-toxic tungsten-matrix shells in its Impact line for waterfowl and for turkey hunting. The turkey-branded shells are designed for 3-inch chambers: 1-5/8 ounces of It5 shot delivering 1,300 fps muzzle velocity.

Think of potential destructive ability as the difference between swinging at a baseball with a Louisville Slugger and a plastic whiffle-bat. The hollow, lightweight plastic bat cannot hit a ball out of the infield whereas in competent hands there is almost no limit to the effectiveness of the sculptured hardwood bat.

Losing density, by any percentage, means losing effectiveness in both lethality and range. The bottom line is that a denser pellet is a better pellet. If a tungsten pellet is launched at 1,300 fps and a bismuth pellet is launched at the same velocity, it is clear that the tungsten pellet will fly farther, and straighter, and strike with greater force.

The combination of powdered tungsten with iron is not the only possibility for non-toxic tungsten-based shot. Powdered tungsten is also blended with synthetic polymers such as nylon, but Eley in England found that producing uniform shot was difficult and switched to the production of bismuth.

Kent however has persevered in tungsten (as well as lead, bismuth and steel) and produces tungsten-matrix shot in its Impact Line for 12- and 20-gauge guns, which the company says, "is physically and ballistically comparable to lead." Apparently, the trick with tungsten was to find a thicker polymer amalgam, one that would suspend particles more uniformly. Inside this polymer matrix, the tungsten would then provide plenty of density, but would be prevented from scarring and was therefore safe to use in any shotgun barrel, new or old.

A Note About "Molyshot"

The ideal lethal load hits with the highest number of pellets. That load must propel a pellet of the right size and weight at the best possible velocity and deliver maximum energy at range. Whew! It is a big order, especially with moving targets and that is most of what you fire at with a shotgun.

Herein is the problem with ultra-hard shot like steel and some of the experimental non-toxic loads. When they hit a duck or goose, they retain energy and pass completely through the bird. That is not the ideal situation. Ideally, your pellets will deform inside the bird, flattening and transferring shock and awe to the body and wings.

You occasionally still hear the term "molyshot," although it is now as archaic as a good manners. Molyshot was comprised of molybdenum disulfide and various non-toxic elements and polymers. It was a true, if temporary, step forward, in the development of current non-toxic tungsten-polymer shot.

Chapter 5

RELOADING EQUIPMENT: MANUFACTURERS AND THEIR GEAR

So you're going to begin reloading. For $250 or perhaps even less, you can get set up with excellent new equipment and buy all of the components you require to begin building your own shotshells. You will need a place to set up, preferably one where you will not be continuously distracted and where you can be reasonably certain that other hands, especially those of children, will not meddle in the components. It would also be very helpful if you had a buddy who was also a reloader, because you will have questions, you will make mistakes, and to call the retailer - who may direct you to the manufacturer - is time consuming and can be frustrating.

Begin with a single stage reloader, one that allows you to learn one shell at a time. Look for things that will make your handloading life easier and simpler. If you shoot both the 12 and sub-gauges, you will save more money per shell by concentrating your loading on the smaller guns. Before you buy, then, verify that the press can be set up to load everything you want to shoot and that it will not cost you hundreds of dollars more to load your 20-gauge and 28-gauge shells, too. It helps to have a press that sizes shells automatically and automatically feeds primers, even if you have to pay a little extra for the primer feed. In short, look for some labor saving features up front. You could end up using this press for darn

Active sporting clays shooters use a lot of shells and are natural candidates to start reloading their empties. This shooter is using Winchester AA factory loads, which are fine for reloading. Handloaders can fine-tune load components for certain targets, too.

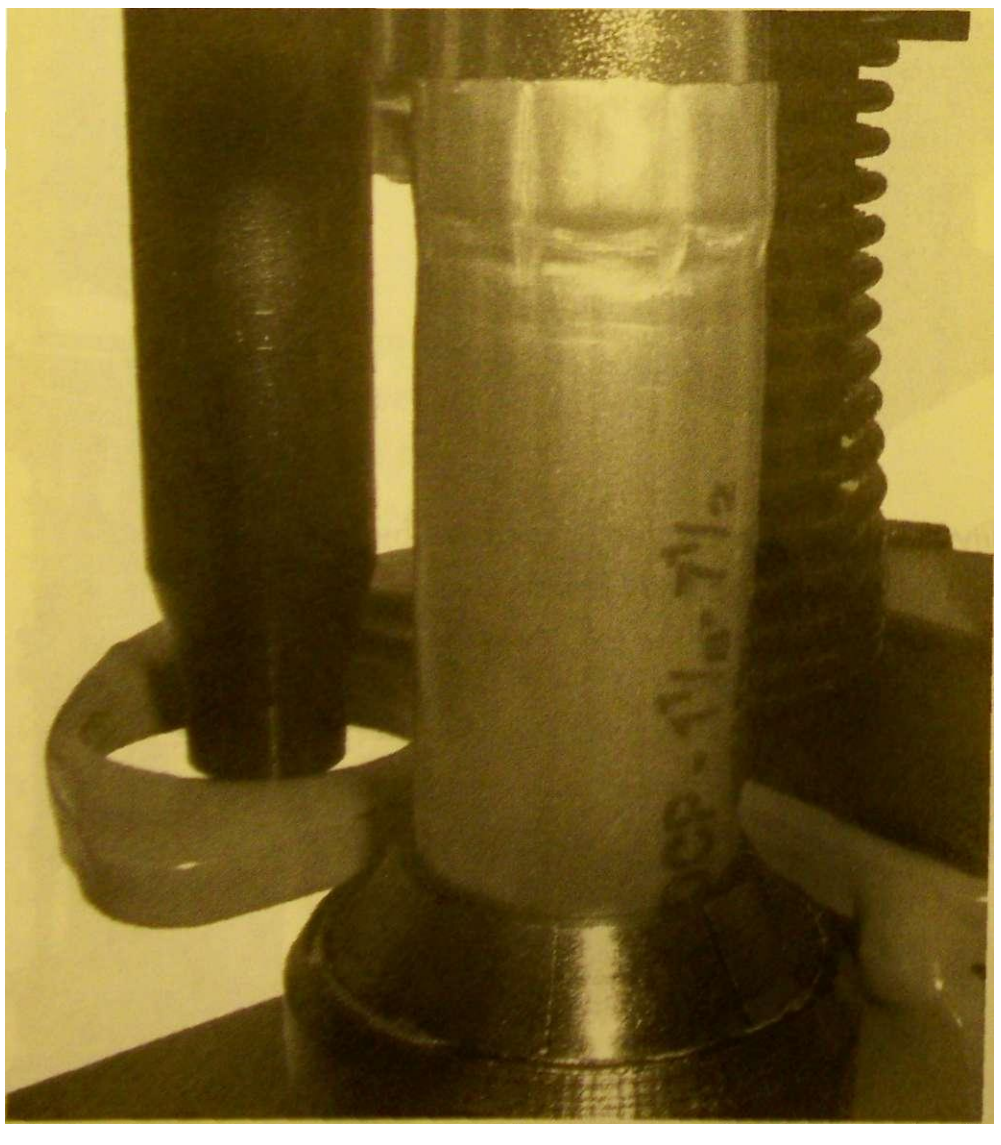
near forever because its serviceability will not decline with age.

At some time in your shotgunning life, you may become deeply involved with one of the clay sports. As an All American Trap Shooter, for example, you would want to speed up the loading process because you are experienced and you need to build more shells. At that time, you might buy a progressive press, i.e., one that automatically advances hulls through the basic reloading cycle with every pull of the lever. Do not sell or junk your single stage, though, because it can usually be retrofit to load your hunting shells, which will usually be far fewer in number and different in load character than those required for a trap shooting.

It is better to spend a couple hundred dollars extra up front for the right machine than it is to suffer with years of irritation. Now, let's go shopping.

MEC: MAYVILLE ENGINEERING

Mayville Engineering (www.mecreloaders.com) has manufactured shotshell reloaders under the MEC name since 1956. Everything from the least expensive single stage machine to a fully automated progressive loader is available in the line. (MEC s Internet site also gives information, prices and parts lists for a number of their discontinued models, thousands of which are still pumping out shells today.)



Close-up of MEC rig filling a clay had of 1-1/8-ounces of 07-1/2 shot.

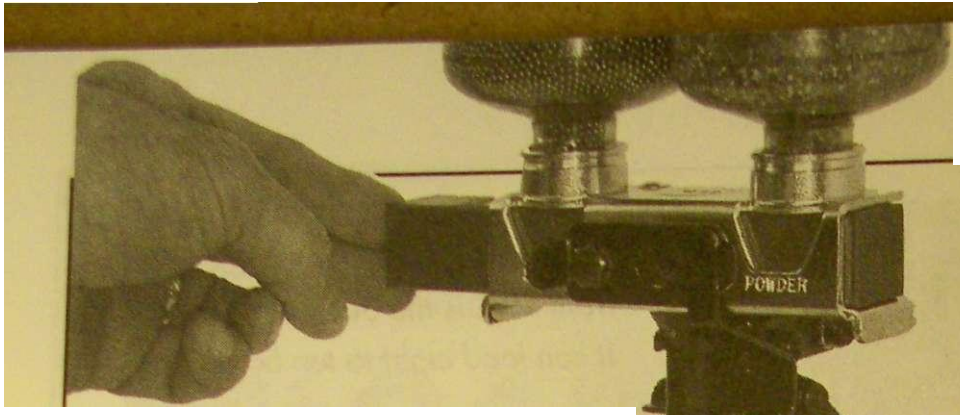
The introductory single stage press from MEC is the 600 Jr. Made V. It can had eight to ten boxes per hour and can be upgraded with an automatic primer feed which eliminates the need to handle each primer individually.

Beginning with what MEC considers "the worlds top selling reloader" and the very first machine many reloaders use, the 600 Jr. Mark 5 was introduced in 1985 and costs only $118. MEC says that once the operator gains a little experience, this single stage reloader can fill eight to ten boxes of shells an hour. In addition, it can be upgraded with the 285 CA Primer Feed, which eliminates the need to handle each primer individually. This press is adjustable for 3-inch shells and is available in all gauges, plus the .410. All MEC reloaders include one charge bar and three powder bushings:

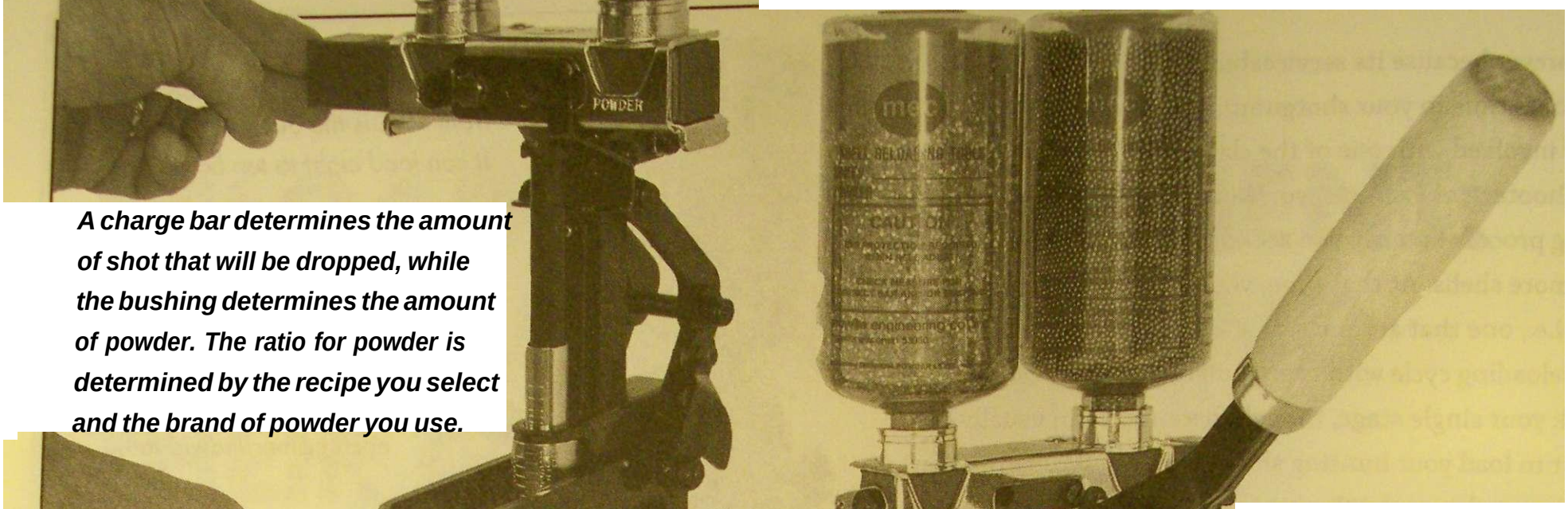
- **10-gauge** (2-**ounce bar with bushings** 37,40 **and** 44),
- **12-gauge** (11/8-**ounce bar with bushings** 29, 30 **and** 32),
- 16-**gauge** (1-**ounce bar with bushings** 23, 25 **and** 29),
- **20-gauge** (7/8-**ounce bar with bushings** 20, 22 **and** 24),
- **28-gauge** (3/**4-ounce bar with bushings** 14,16 **and** 21)
- **,410-bore (1**/2-**ounce bar with bushings** 10,11 **and** 12, **or for a 3-inch shell, the** 11/16-**ounce bar with bushings** 10,11 **and** 12).

MEC believes that its Sizemaster reloader is an excellent choice for hunters. The built-in Power Ring Collet Resizer returns all types of shells - with brass or steel bases, high base or low - to factory specifications. The Sizemaster is adjustable for 3-inch shells and fills all gauges and the .410. Additional die sets cost $90 for any gauge except the 10, which is $105. Extra powder bushings are $2.20 and charge bars are $13. An automatic primer feed is standard on the $179 Sizemaster. It loads primers for all gauges, except the 410.

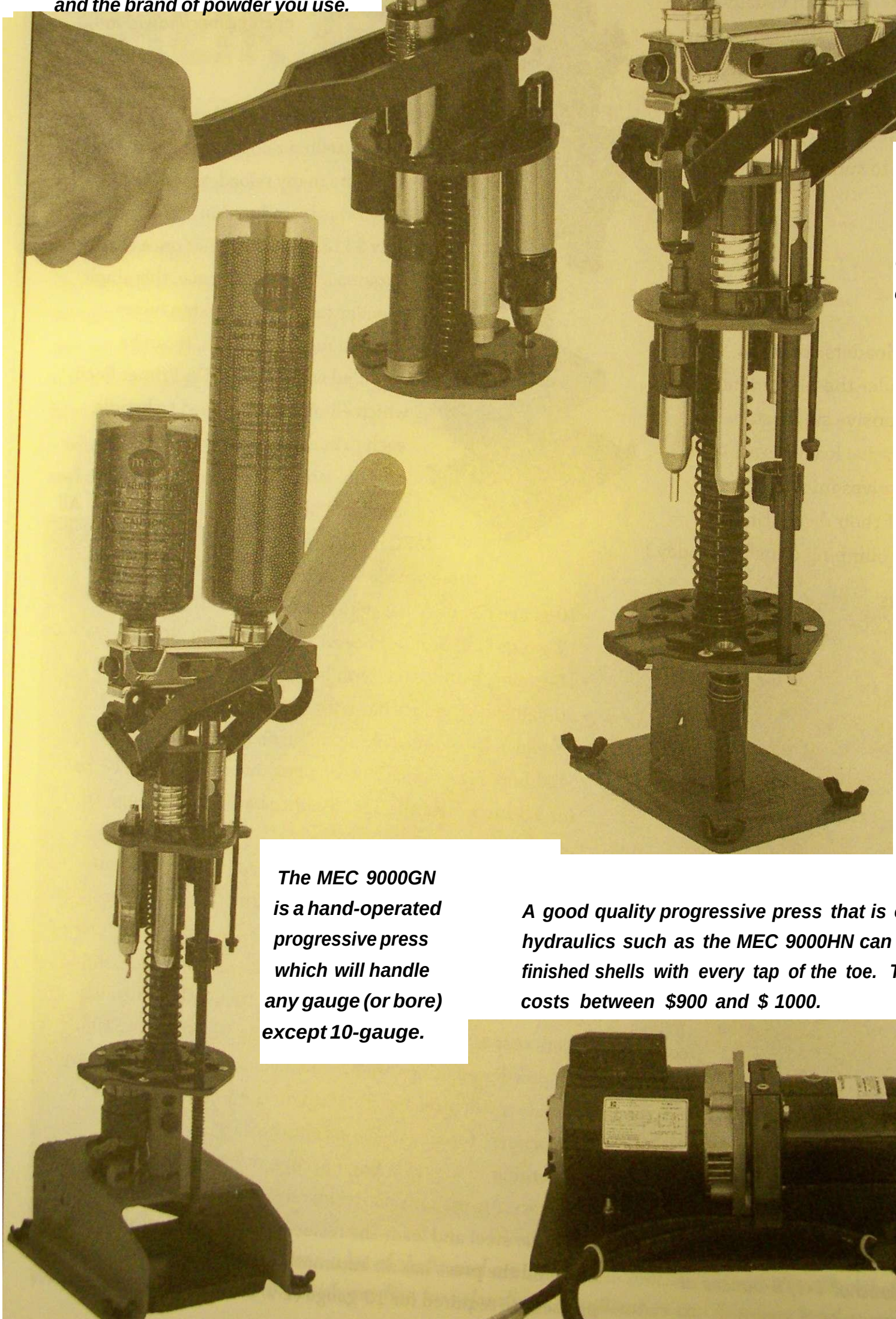
According to Mayville Engineering, the gauge-specific Steelmaster is the only shotshell reloader that is fully equipped to handle steel and lead. The resize head accepts any shell base and the press has an automatic primer feed. Separate *presses* are required for 10-gauge (1-1/2-ounce bar for BB

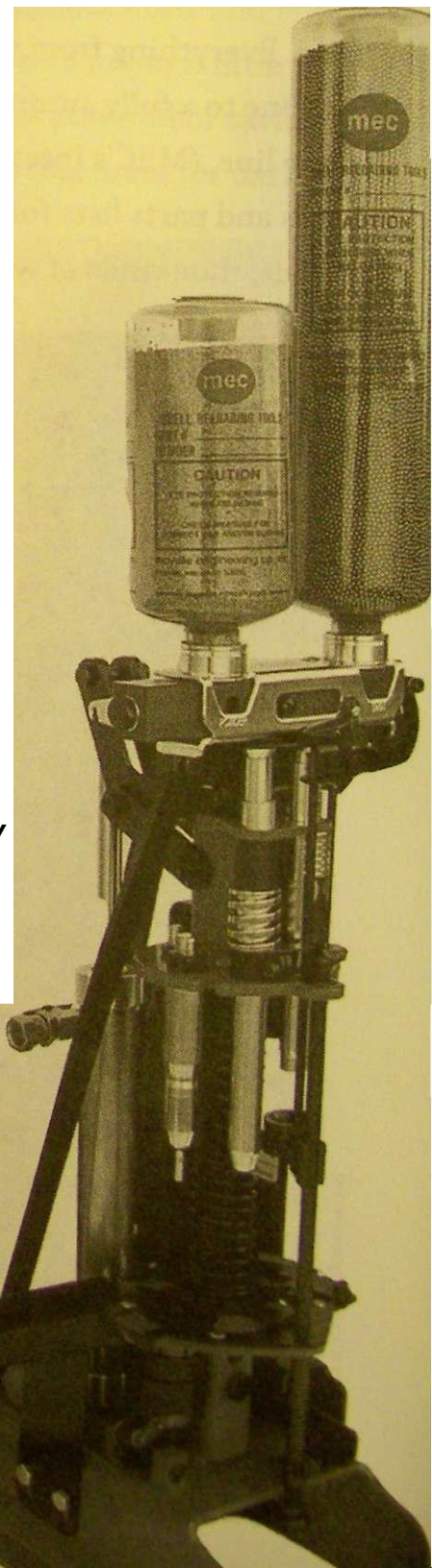


A charge bar determines the amount of shot that will be dropped, while the bushing determines the amount of powder. The ratio for powder is determined by the recipe you select and the brand of powder you use.



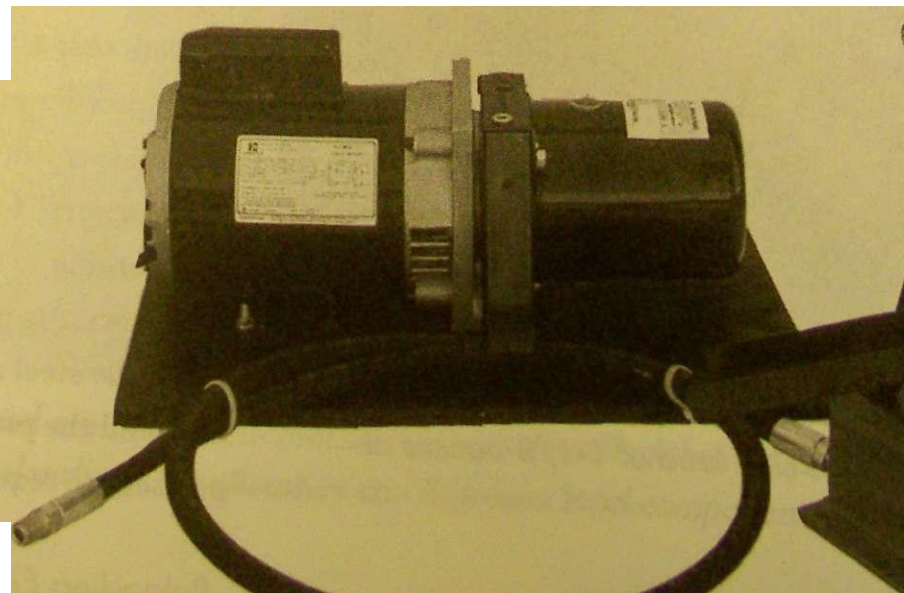
A good quality reloader like the MEC 650N will reload a lot of shells without giving you many maintenance hassles. The 650N has three crimp stations: beginning the crimp, folding and tapering.

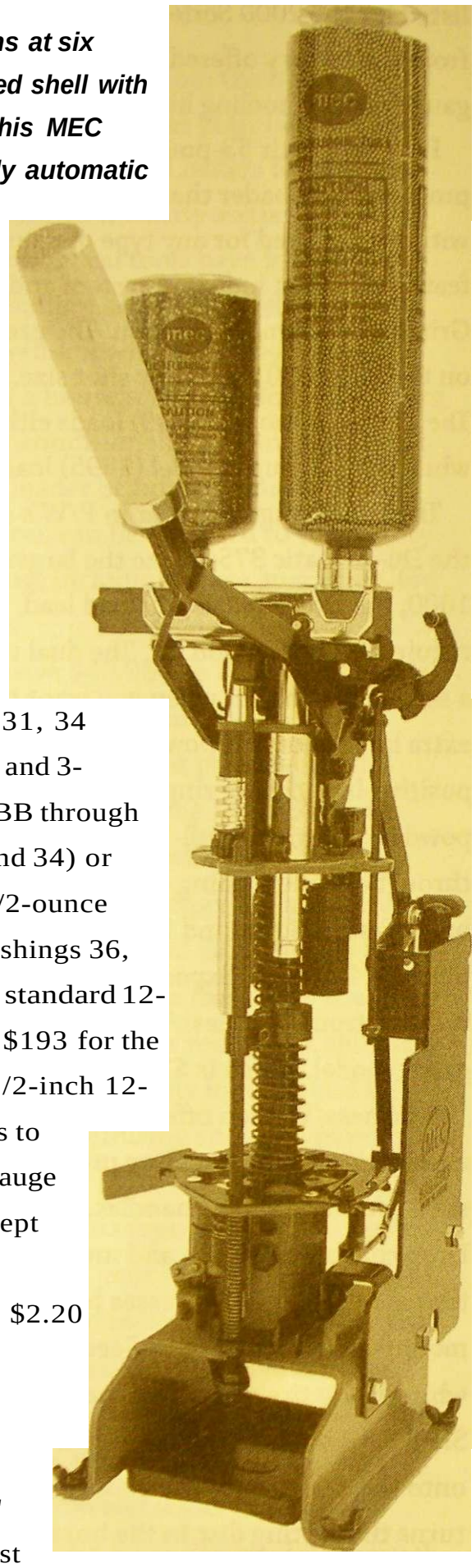




The MEC 9000GN is a hand-operated progressive press which will handle any gauge (or bore) except 10-gauge.

A good quality progressive press that is operated by hydraulics such as the MEC 9000HN can produce finished shells with every tap of the toe. This set-up costs between $900 and $ 1000.





The ten different operations at six stations produces a finished shell with every pull of the handle. This MEC 8567N Grabber has a fully automatic primer feed, as well as auto-cycle charging and three-stage crimping.

through #2 with bushings 31, 34 and 37), 12-gauge (2-3/4- and 3-inch: 1-1/8-ounce bar for BB through #3 with bushings 25, 32 and 34) or 12-gauge (3-1/2-inch: 1-1/2-ounce for BB through #2 with bushings 36, 37 and 39A). In the 10- or standard 12-gauge expect to pay about $193 for the Steelmaster, but in the 3-1/2-inch 12-gauge size, the price jumps to $206. Die sets to change gauge cost $90 for any gauge except the 10, which is $105. Extra powder bushings are $2.20 and charge bars, $15.

The MEC 650N is advertised as "maximum effect for minimum effort" - at the bargain price of just $240. Although it works on six shells at once and finishes a shell with each pull of the handle, the 650N does not resize hulls. If you buy this press, resizing becomes a separate operation. MEC says that the 650N is "the ideal press for the person who likes to resize and inspect their shells as a separate operation." (MEC s separate Super Sizer shell resizer costs $67. It is built-in to all "new generation" MEC reloaders. Separate parts must be purchased to resize different gauges.)

The 650N press uses three crimping stations. The first one starts the crimp and the second closes it. The final station places a very slight taper on the shell, which allows it to feed easier through pumps and semi-auto*.

Other features *of* the 650N however make it more attractive. The automatic primer feed is standard, for instance. This press is available in all gun sizes, but die sets to switch one machine between gauges are not available and the 650N does not load 10-gauge shells.

MECs progressive 8567 Grabber mechanically programs 10 operations at six stations. This $338 reloader has a fully automatic primer feed, auto-cycle charging and the three-stage crimp mentioned above. The built-in Power Ring resizer operates without interrupting the reloading sequence. The operator manually places hulls and wads in the proper place and a finished shell is subsequently produced with each pull of the handle. Optional kits are available to load 3-inch and steel shells. (The 8567 is not available in 10-gauge.)

The 9000-Series is MECs top-of-the-line progressive press with plenty of automatic features, such as primer feed. The $407 model #GN is hand-powered while the $958 #HN is hydraulic and operates via a foot pedal. These machines incorporate all of the 8567's features including automatic resizing, automatic indexing and finished shell ejection after final crimping. The 9000-Series does not reload 10 gauge shells and die sets are not available.

MEC has a number of press accessories available such as a dust cover, larger capacity primer feed tray, jig fixture and intermediate bottle supports. Note that a steel shot kit and charge bar must normally be installed to reload steel shot.

PONSNESS/WARREN (P/W)

Ponsness/Warren (www.reloaders.com) has developed reloading gear for almost 40 years and its Platinum 2000 Series progressive reloading presses are state-of-the-art. The 2000s feature P/W's typical cast frame and precision-machined parts. With eight shells in separate stations and various stages of completion, a 2000 automatically performs the following functions with each pull of the handle: indexes the shells, de-primes and re-primes, drops a precision volume of powder, inserts the wad, then drops a precision volume of shot, crimps the shells and finally ejects a completed shell.

The author of the previous edition of this venerable volume called P/W reloader s full-length re-sizing dies their "very best feature." With a P/W 2000, the shell is pressed into a sizing die at the very first station and it rides through the balance of the process contained within this steel ring. In this system, a hull rarely distorts, and as much pressure as necessary can be applied for proper crimp closure.

P/W is especially proud of the hopper and the primer feed on these machines. Their EZ-Fill Access Hopper holds more than 25 pounds of shot and up to a pound of powder in a high-impact plastic divided container. When you need to load

several different recipes, special bushing-access holes allow quick shot and powder bushing changes without the usually laborious task of draining and removing hoppers. Purchased separately, it is $90.

The brass external primer feed allows an operator to easily adjust primer seating depth without taking the primer feed assembly out of the machine. Primers are held in a tray, approximately at eye level, and are fed downward through a sleeve into the feed assembly by gravity. Purchased separately, the primer feed is $100.

A Lifetime Warranty on the index system and P/W's new Die Removal Cylinder come with this series of presses. P/W says the Die Removal Cylinder is built with 100 percent Grivory®, which it says is "a new compound that is stronger and more rigid than aluminum." It allows you to easily remove and inspect shells during the reloading process to check powder or shot weights, by simply lifting a die pin and sliding out the shell. The 3-pound Die Removal System is also available to update many older P/W reloaders. It costs $170 and comes with the P/W shell extracting kit.

A 52-pound Platinum 2000 with sizing die system is available in 12-gauge (powder bushing H, shot bushing #6 for 1-1/8-ounce), 20-gauge (powder bushing D, shot bushing #4 for 7/8-ounce) and 28-gauge (powder bushing B, shot bushing #3 for 3/4-ounce), as well as the .410-bore (powder bushing 2A, shot bushing #1 for 1/2-ounce). They have a catalogued price of $699, although the factory's 2004 Christmas Special flyer offered them for $649 and you can undoubtedly buy them for less through a reputable internet source. (Of course, if you buy through a local retailer, you may not pay the rock-bottom price. You will almost certainly, however, have access to friendly and helpful technical assistance when you run into difficulties or have questions that are not covered on the manufacturer's Internet site. And you will have questions.)

The P/W 800 Plus was new for 2004. Built with full-length resizing dies and a gear-style index system, this progressive machine sounds an audible "dick" when it is fully indexed. (Because I always worry about proper seating and positioning of mechanical elements, I like this small feature.) A die-removal cylinder allows for easy shell removal at any station. The 800 Plus uses the EZ-Fill Access Hopper and all other standard features of a 2000. Lacking a central shaft, 800 Plus tooling kits are installed in a tool head. This allows you to convert to another gauge in about five minutes without the need to readjust any of the crimping stages.

The 52-pound 800 Plus with sizing die system is available in 12-, 20- and 28-gauge as well as .410-bore with a catalogued price of **$699** and the same powder and shot bushings as those listed for the 2000 Series. The 2004 Christmas Special flyer from the factory offered these reloaders for $649! Individual gauge-specific tooling kits cost an extra $295.

P/W says their 53-pound L/S-1000 is the "only fully progressive reloader that loads lead, steel and bismuth shot without the need for any type of conversion kit." This press features a silent indexing system and the company's new Grivory Die Removal System. The precise Uni-Drop System on the L/S-1000 drops any shot size, up to and including BB. The 12-gauge model ($849) loads either 2-3/4- or 3-inch shells while the 10-gauge model ($895) loads only 3-1/2-inch.

The single stage reloader in P/W's current press line-up is the Du-O-Matic 375C. Like the larger and more expensive L/S-1000, the Du-O-Matic will load lead, steel or bismuth without requiring a conversion kit. The dual tool head lets you install a second tooling set when you want to change gauge. Look for extra large shot and powder tubes, which include baffles and a positive-lock charge ring that prevents the accidental flow of powder. A positive, full-length resizing die contains the shell throughout the loading operation. Your shell always emerges bulge-free. A 31-pound Du-O-Matic is available in all gauges plus the 410 bore. Expect to pay around $300 if you purchase it direct from Ponsness/Warren, except for the 12-gauge/20-gauge model, which is $384.

Ponsness/Warren offers a large number of options and accessories for its reloading presses such as dust covers, shell counters, shovel handles, a new finished-shell Front Drop collection system and multiple types of conversion kits that allow older P/W presses to load non-toxic shot. Its top-mounted Automatic Shell Feed System is available for those who quickly tire of feeding shells manually, one by one. The Shell Feed holds 500 empty shells, and sends them brass-down onto the shell feed seating assembly. An electric motor, which turns the sorting disc in the hopper, is equipped with a micro-switch that stops the motor automatically when the feed tube is full (30 pounds, 12-gauge only, $395 Or thereabouts).

About the time your eyes glaze over and you're sure that you will soon turn up three cherries from cycling the press handle, you will be willing to spend $899 for P/W's Hydro-Multispeed, single cylinder hydraulic system. With a floor-mounted pedal, this 65-pound hydraulic system permits hands-free reloading. It has three speed settings and P/W guarantees that it will not damage your P/W reloader with high pressures. Extra-long hoses with quick-disconnect couplings allow for floor placement of the motor. An optional cylinder kit allows you to hook up your Hydro-Multispeed assembly to more than one press for loading multiple gauges or recipes at one time **(9** pounds, $400),

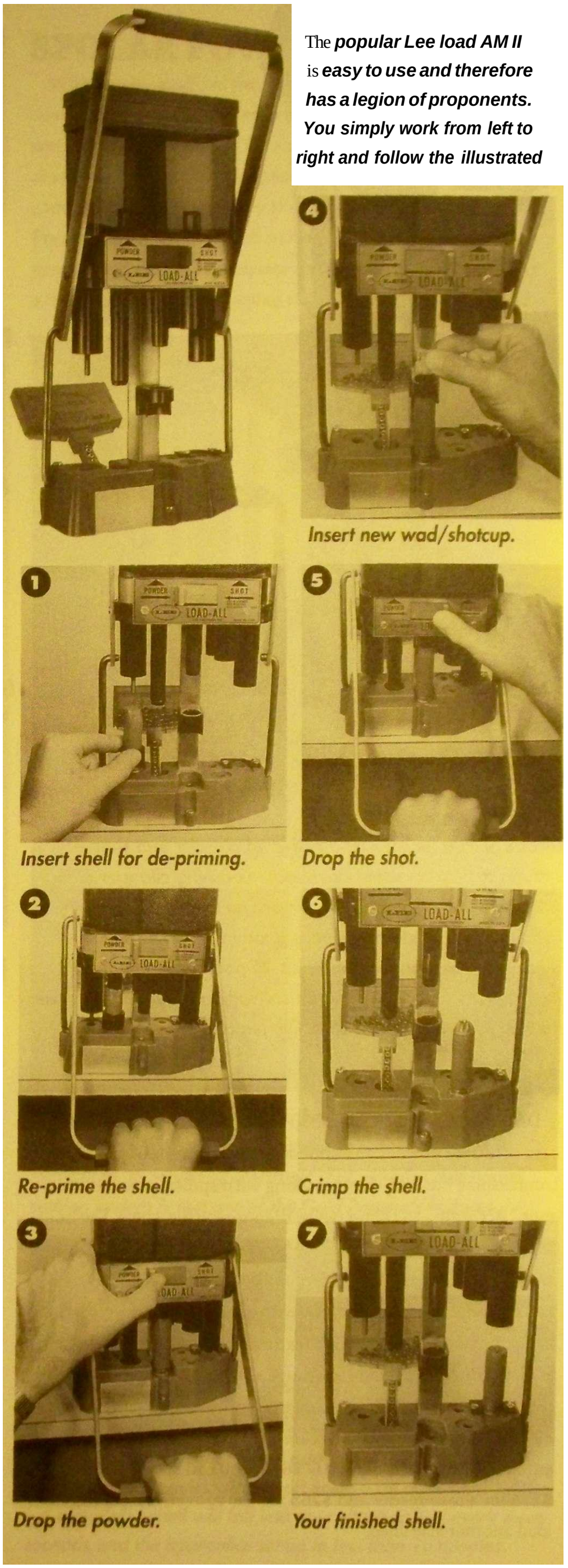
LEE PRECISION

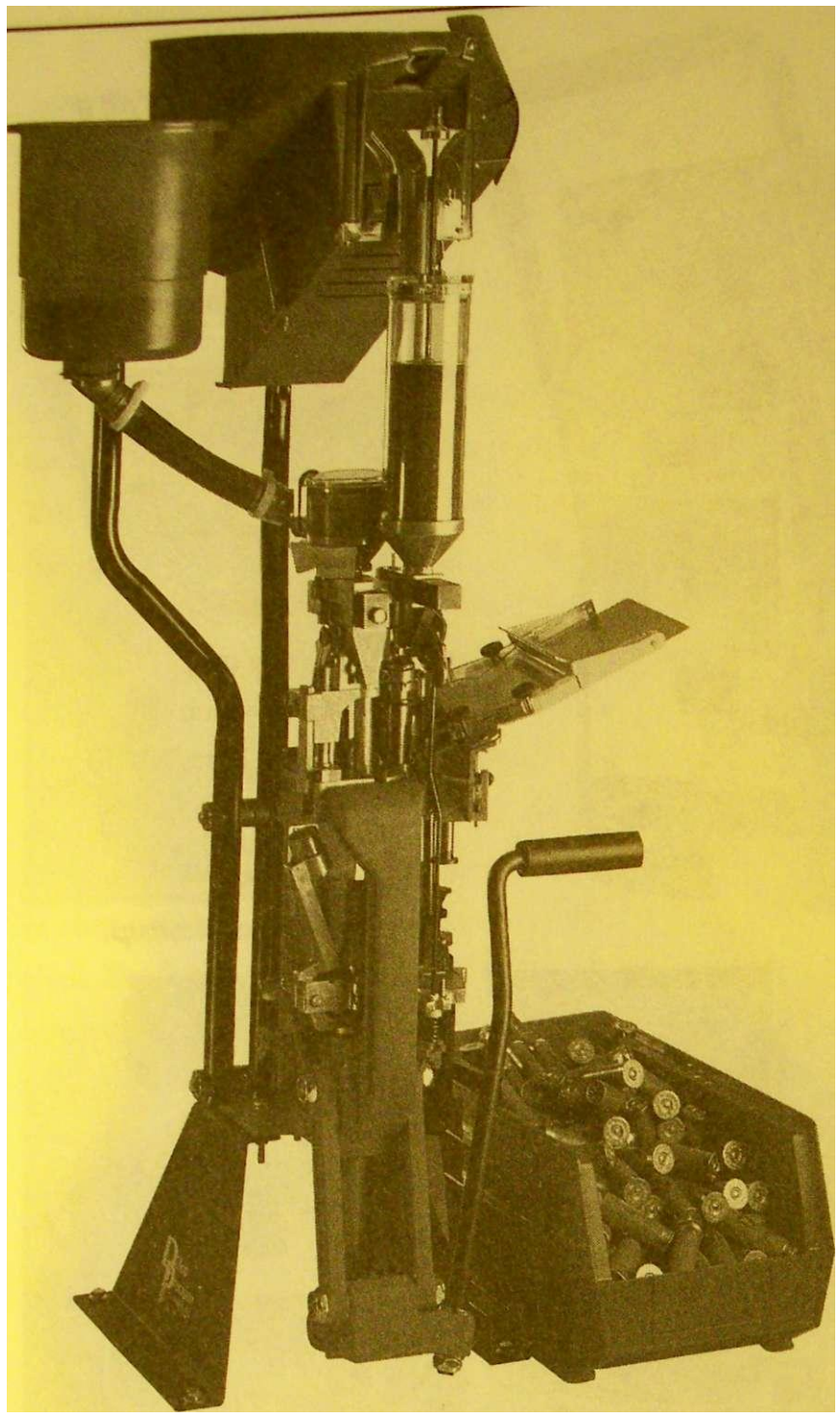
The Lee reloading business took off from the home workshop of Richard Lee in 1958, In that year, Lee invented the famous Lee Loader. Additional Lee Loaders for rifle and pistol ammunition came along in the early sixties. Lee says that their "effective and economical tools have introduced more than one-and-a-half million shooters to reloading." Then, in the mid-70s, the well-known Lee Load-All hit the market, establishing Lee as a household name in handloading circles. Lee equipment is unconditionally guaranteed for two years. In addition, any Lee loader of current manufacture, regardless of age or condition, can be returned to the factory for "like new" reconditioning, including a new guarantee, for half the current retail price.

The popular and inexpensive $49.98 Lee Load-All II single-stage press works for lead or steel shot in 12-, 16- and 20-gauge (www.leeprecision.com). The spent primer-catcher is built-in and conveniently empties in the front. Recesses at every station allow positive shell positioning. Gauge conversion is easy and economical by simply replacing the die carrier ($20). An optional primer feed ($10) means that you never have to touch the primer from the box to the shell. Each new purchase includes twenty-four red plastic shot and powder bushings. The bushings are visibly indexed and this keeps neophyte reloaders from confusing shot and powder charges.

What has given the Load-All II its reputation is the extreme ease with which it operates. Work your way from left to right and follow a pamphlet's illustrated instructions. (I found the loading advice a little more abbreviated than I would have preferred, however.) Adjustments are simple - some would say primitive - but straightforward, which might confuse digital children. Nevertheless, you will understand the fundamentals of each step without having to muddle through much extraneous clutter-

If used with patience, the Load-All II can make excellent reloads for 2-3/4- and 3-inch shells, high or low brass bases with six- or eight-crimp closures. The Load-All II is not however sized to build 3-1/2-inch shells because the die set is not deep enough to reach the base of the loader with a shell that tall in the die set. Therefore, proper sizing on 3-1/2-inch shells cannot be accomplished. Of course, this press is not **a** racehorse and it can teach you to work methodically. If you do not push this machine beyond its limits, you will have **a** productive press that you can enjoy for many years. Lee does not build **a** progressive reloader, or **a** press that will handle the 10- or 2&-g?uge or the 410.

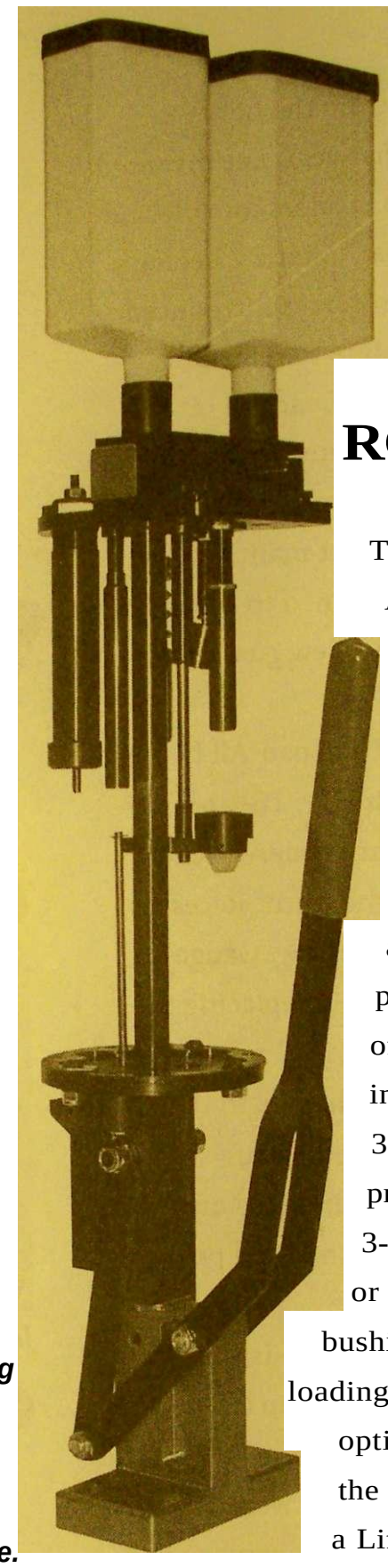




Dillon's SL 900 features case-activated powder and shot systems to help eliminate troublesome bushing changes along with spilled powder and shot According to Dillon, the built-in adjustable powder measure is good to within one-tenth of a grain and the shot hopper holds 25 pounds! There are no bushings for shot or powder to deal with in this Dillon machine. That, in itself, is a hugely attractive feature.

DILLON

Dillon writes that their SL 900 features "easily adjustable, case-activated powder and shot systems that eliminate troublesome bushing changes along with spilled powder and shot" According to Dillon (www.dillonprecision.com), the built-in adjustable powder measure is good to within 1/10 of a grain and the shot hopper holds 25 pounds! There are no bushings for shot or powder to deal with in this Dillon machine. This, in itself, is a hugely attractive feature. The automatic indexing SL 900 loads 12-, 20- and 28-gauge shells and by switching tool-heads, you can switch gauges without having to reset your dies and measurements. The case feed and priming systems are automatic. The basic SL 900 is $646. You can spend another $174 for a case-feeder and $263 for the conversion package to load another size shell.



The 7-station MiniGrand from RCBS is designed for entry-level reloading of lead or steel shot. It is sold with a Lifetime Warranty.

RCBS

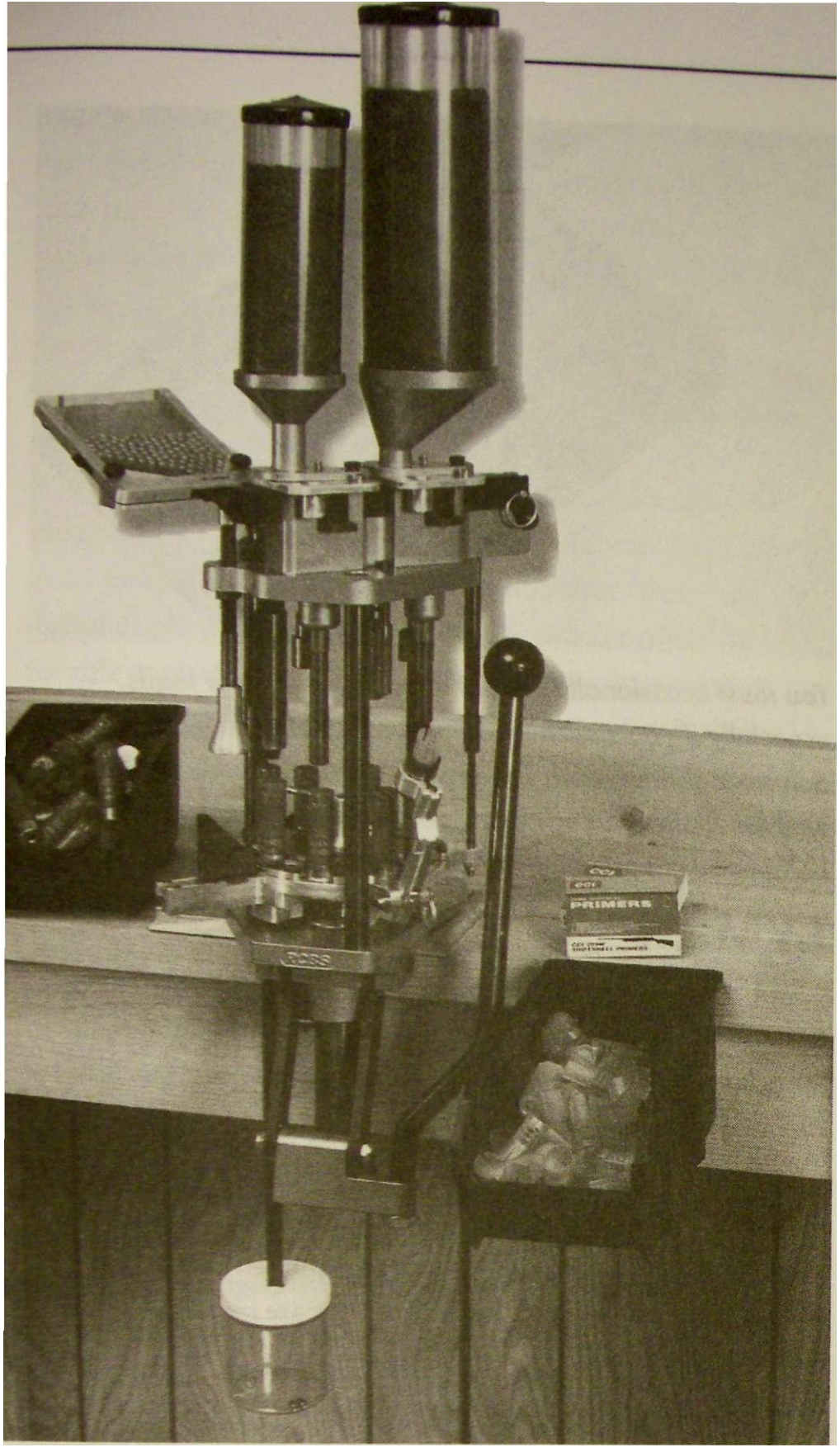
RCBS is part of the ATK (Alliant Techsystems: (www.rcbs.com) Ammunition & Related Products Group with Federal Cartridge and Alliant Powder.

The new, 7-station single-stage RCBS Mini-Grand is designed for entry level reloading of lead or steel (with the appropriate steel accessories) and its hopper holds 1/2-pound of powder and 12-1/2-pounds of shot. The Mini-Grand is available in a 12-gauge version to load 2-3/4-, 3- and 3-1/2-inch shells. The 20-gauge press will accommodate 2-3/4- and 3-inch shells. Using RCBS, Hornady or Ponsness-Warren powder and shot bushings, the Mini-Grand is capable of loading 200 hulls (8 boxes) per hour. An optional taper crimp die is available for the Mini-Grand. This reloader comes with a Lifetime Warranty. At Christmas 2004, the Mini-Grand was $125 from RCBS or $100 from Graf 8c Sons at www.grafs.com. (An optional $18 dust cover is an excellent idea for a machine as complex as any shell press, especially if it is mounted in a room without constant temperature and humidity controls.)

The progressive shotshell loader in the RCBS line is The Grand. It is available for 12- or 20-gauge shells at $724. Conversion kits to switch between 12- and 20-gauge reloading cost $336. The 8-stage Grand is "intended for the shotgunner who requires accurate, precision shotshells for hunting or trap and skeet," RCBS says. "The operator merely has to start a hull at station one and insert a wad in the wad guide at station four. All other functions are performed automatically. Once in full operation, a loaded shotshell is dispensed each time the handle is cycled through the full down-and-up strokes." The shot-drop and powder-drop systems are case-activated and will not drop shot or spill powder unless a hull is properly in place. With the

SPOLAR POWER LOAD

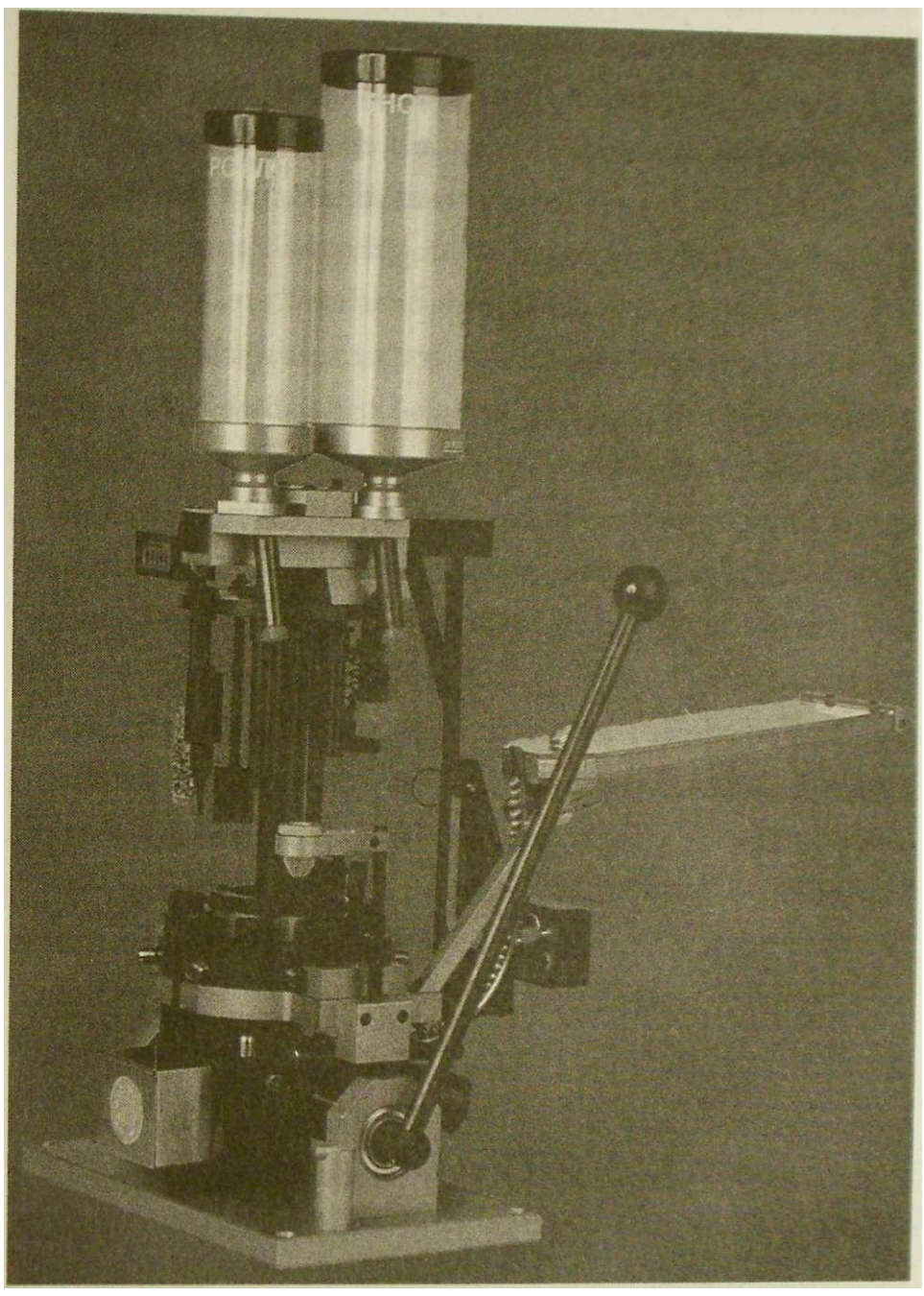
With a gold anodized finish and handsomely crafted construction, the Gold Premier is rated very high for workmanship. At $1,295 for a single gauge, the machined aluminum Spolar Gold progressive loader (www.spolargold com), originally designed by the late trap shooting champion Frank Simpson, costs much more than other top shotshell presses and plenty of adequate shotguns, too. If you still have a few extra bucks after paying for your reloader, you can add



The Grand is the RCBS top-of-the-line progressive shotshell reloader. Once you have cycled this press into full operation, it dispenses a ready-to-shoot shell with each pull of the handle.

powder-drop station at the front, it is easy to remove the hull to weigh powder if you suspect an error has been made. The powder charge bar also accepts Hornady bushings. The Grand's powder hopper holds one pound; the shot hopper holds 25 pounds; and its steel resizer ring will work with either high- or low-base brass. Its cast aluminum frame is held together with steel rods and links.

A Hydraulic Conversion Kit to convert The Grand to full hydraulic operates with two foot switches, one for up and one for down. Releasing pressure on the switch automatically stops the operation of the press. The unit features quick-disconnect hoses and *is* capable of boosting operation to a whopping 660-shells (26+ boxes) per hour. RCBS says that complete installation only takes between 15 and 30 minutes. This unit costs $900,



The gold-anodized finish of the Spolar Gold Premier allows this superbly well-thought-of loader to look as good as its reputation. Its vibrating electronic shot, powder and primer settling system is just one of the Gold Premiers features.

Dicksie Spolar says that if you add a foot-operated hydraulic mechanism with quick-disconnect hoses - an additional $995 - a completed shell will fall into your shooting box every three seconds and the hydraulics set up in less than 10 minutes.

a foot-operated hydraulic mechanism with quick-disconnect hoses for an additional $995. Spolar says its hydraulic operating system allows a completed shell to fall into your shooting box every three seconds and you can set up the hydraulics and hoses in 10 minutes or less. After this, you may still want to add $265 for gauge changing materials and $580 for a custom reloading table.

If quality construction is important, you will enjoy the fluid movement made possible by closely machined tolerances and sealed ball bearings in many of the moving parts. Left-handers will appreciate the ambidextrous nature of the Gold's left- or right-side handles, too. An exceptional feature of the Gold Premier is that it can be disarmed and everything halted during a loading cycle. Dies are removable of course, and the charge bar can be unhooked without spilling shot and powder.

The Spolar Gold Premier is loaded with features. It has a vibrating electronic shot, powder and primer settling system. All four of the competition gauges - 12, 20, 28 and .410 - are available and they can be changed in less than five minutes without making extra adjustments to your settings. Shells can be removed at any station, and your wad and shot drop almost simultaneously. This machine has a locking system to prevent any unauthorized meddling. The Gold has a 25-pound shot capacity and comes with a shell counter. Spolar says they are the only manufacturer that loads "a minimum of 100 factory test rounds with your recipe prior to shipping" a unit to you.

HORNADY

You can buy a Hornady 366 progressive reloading press in 12-, 20-, 28-gauge or .410-bore for $430 from www.outdoorguides.com. Look for additional information on the Hornady site at www.hornady.com. Nevertheless, the 366 features full-length base and hull resizing, automatic primer feed, swing-out wad guide, three-stage crimping, automatic advance and automatic ejection of the finished shell. For $180, you can purchase die sets for additional 2-3/4-inch shells in other gauges. Additional lead shot bushings are $6.

The Spolar Gauge Conversion Caddy handles 12-, 20- and 28-gauge, plus the 410-bore. Spolar says the five-step process of changing gauge takes just five minutes and each caddy stores a complete conversion lot

You must occasionally check the accuracy of your loads, especially if you switch loads or switch between lead and non-toxic shot or steel. The Lyman 1200 will work equally well for shotshells and cartridge reloading. Always recalibrate before you check weights; it takes less than a minute.

LYMAN

In 1878, William Lyman invented the tang-mounted peep sight. That was the birth of Lyman Products and today, 125 years later, the company (www.lymanproducts.com) includes Pachmayr, Trius, TacStar and A-Zoom.

To be confident in your reloading, you must have an accurate scale and, in this area, cheap is inexcusable and contains the seeds of unhappiness. Of course, your shot bar and bushings should give you the confidence that they are correct, but what about that afternoon that the kids keep barging in to your reloading shrine or you have a grudge against your spouse? Are you certain you can proceed without being distracted? Did you double-check ingredient weights now and then for each recipe you loaded?

A 1,000-grain powder scale works extremely well, adds very little noticeable time to the overall loading procedure and permits greater accuracy of your weights and measures. You also use an accurate scale to give you peace of mind and keep your spouse from collecting on the insurance. Here is an example of why a precise scale is useful.

Steel shot bushings are available for most reloading presses, but they may be thought of as limited-application tools. Smaller pellets work as indicated and will flow through bushings well. Large steel pellets are often difficult to volumetrically meter through a bushing, however, as they seem to hang up wherever they can. Nobody makes so many hunting loads with large pellets that they should not be able to take the time to weigh each pellet charge.

The comparisons hunters often make to lead shot loads seem to compel them to overload steel. Hunters have, for years, assessed load application by payload weight and have

associated certain weights with a lethal hunting load. For example, everyone knows that 1-1/8 ounces of lead is a target load, right! However, 1-1/8 ounces of steel is a magnum payload, the pellet equivalent of around 1-1/2 *ounces* of lead. For a 12-gauge, a 1-1/2-ounce load is a magnum, by anyone's definition. (Actually, this misapplication of low velocity, high volume steel shot loads is somewhat to blame for steel shot's poor image.)

So here are a couple of Lyman scales that are excellent for the reloading bench. The LE-1200 Electronic Scale has a 1,200 grain-weight capacity, powder pan, calibration weight and digital display. It will work equally well with shotshells and for rifle or pistol cartridge reloading. One touch converts it to metric (gram) mode and its compact size makes it almost inconspicuous on your loading bench. Power is available through a wall outlet or a 9-volt battery (not included). Order direct from Lyman and you will pay $265 for the LE-1200.

The LE-800 is a slight step down, although it actually measures up to 850 grains, not just 800. The LE-800 works on AAA batteries, and a set is included. The smaller scale is $183.

Lyman has several suggestions that will help you get accurate readings from their electronic scales. First, scales should always be used in an area free of air currents. Second, each time you use it in a new reloading session, go ahead and recalibrate. Because Lyman electronic scales operate at the touch of a finger, this only takes a few seconds. Next, if you move your scale into a new room that may have a different temperature and/or humidity, the company suggests letting the scale stabilize for a half hour before zeroing and calibrating. Speaking of recalibrating, each scale comes with a set of instructions beginning, "Do not calibrate the scale with the powder pan on the platform, as this will cause incorrect programming" The Lyman website includes detailed instructions for each model scale.

If you are of the old, pre-digital dinosaur order when batteries were not required to operate all of your toys at Christmas, you may want one of the Lyman Mechanical Beam Scales. The 2-pound Model 500 offers 505-grain capacity and is accurate to 1/10-grain. It offers "positive pan positioning and magnetic dampening" for $73. Step up to the Model 1000 mechanical and you can measure up to 1,005 grains with the included scale counterweight.

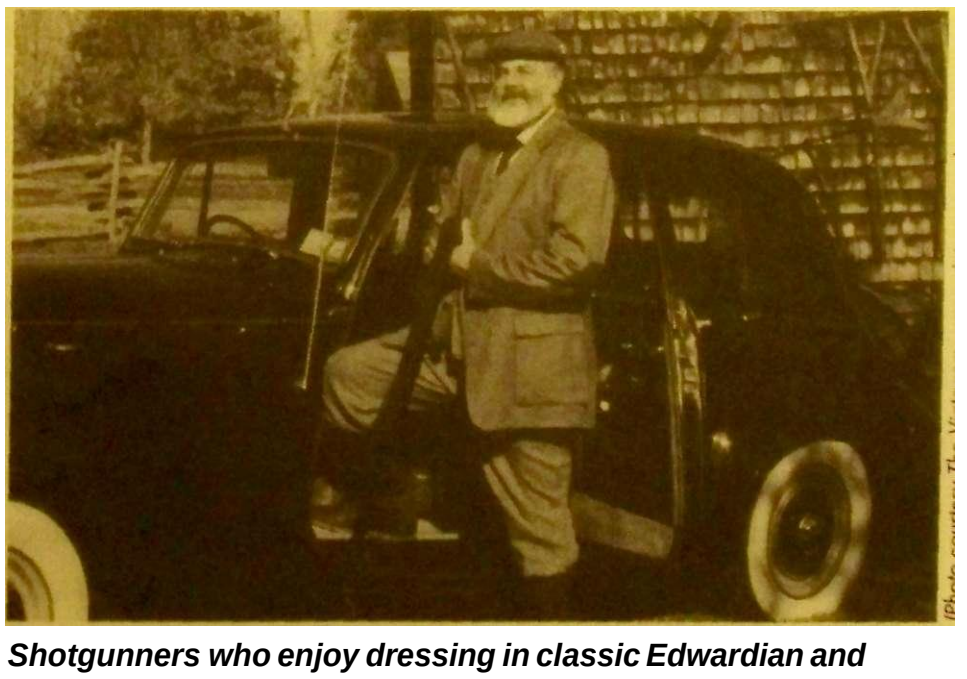
MISCELLANEOUS GEAR

Hall Marker: Have you ever fished in your pocket and pulled out a reload and not really been certain what it was? Was it a #6 or is it an #8-1/2? This could be a problem on the gkeet range and when bird hunting, too. You can avoid mixed up or mis marked shells with a hull identification stamp kit You could also apply a color-coded stacker from an office products store (to the base perhaps, not on top of the crimp where a sticker might change the load's pressure parameters) or you can just experiment with indelible inks to see which felt-tipped pen works best. Whatever you choose, marking your reloads is an excellent idea, *especiaOf* if you load more than one type of shell and have trouble keeping things straightened out.

Hull Skiver: Hull skiving removes a thin layer of plastic from the mouth of the hull and tapers hull openings for easy component placement and better fold crimps. The aluminum oxide abrasive coating is long lasting. Buy the Skiver for $10 or simply or carefully use the fine-grit sandpaper from the garage.

Roll Crimping: Handloaders sometimes rely on a six- or eight-fold crimp when a roil crimp would be better, say the experts at Ballistic Products (www.ballhsticproducts.com). Factory ammo uses fold crimps because the process is dictated by high-speed machinery. As a reloader, you can choose based on performance rather than on someone else's convenience. Roll crimped shells are especially excellent for buckshot and slugs or sabots, for heavy payloads and any custom hull lengths. They also give consistent closure resistance and deliver consistent chamber pressures.

With the right tools, roll crimps are easy to build and your shells look pretty darn good when they are finished. Roll crimps are made with a special bit that, through a combination of heat and pressure, turns over the final 1/4 inch of a hull inward and down, until the edge contacts the overshot card that sits on top of the payload. The roller that makes the crimp is about $30 and it is specific by gauge. A special hull vise to hold the shell is about $40 and, considering the aggravation in dropping or spilling, may be well worth the cost.



*Shotgunners who enjoy dressing in classic Edwardian and Victorian era clothing, and shooting antique side-by*sides* • or new guns made to antique patterns - will certainly want to consider reloading, because many current shells create pressures that me too great for the chambers of old, hammer-style gum.*

Chapter 6

SHOTSHELL RELOADING A STEP-BY-STEP GUIDE

Before you begin placing hulls in your reloading bin, you must examine each one for significant wear: permanent creases, broken crimps, cracked bases or separation between the brass base and plastic hull Resist the temptation to over-use worn hulls. This can cause loss of pressure in the chamber and barrel and can result in dud loads.

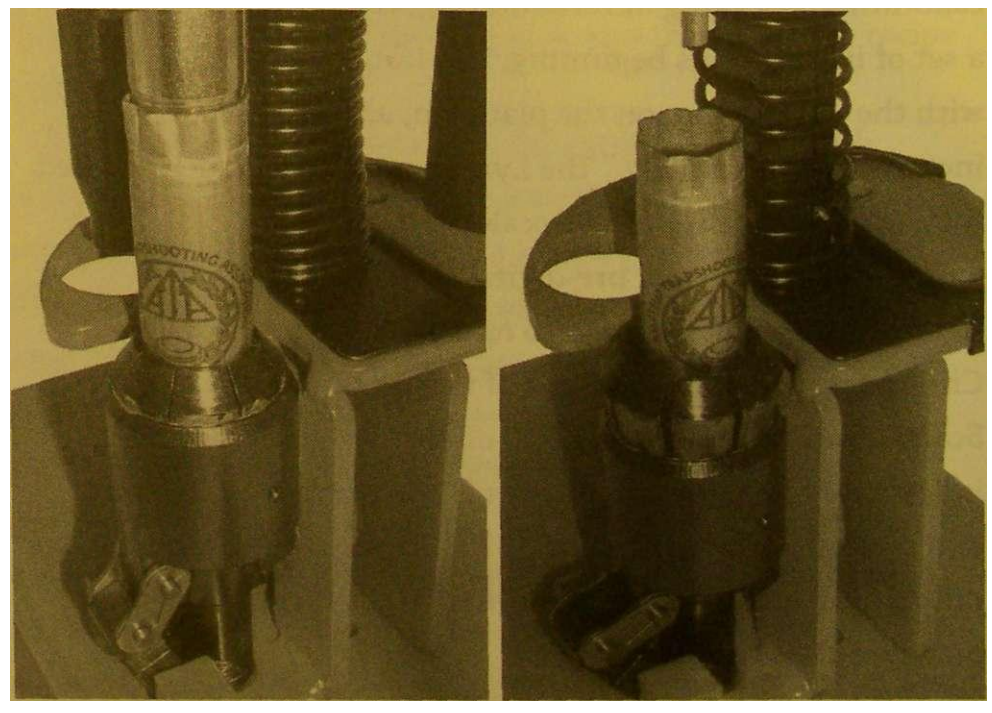
The first step in reloading a shell is to inspect your hulls for flaws. A modern hull has a certain lifespan and, barring some specific injury - being stepped on, for instance - it should last a dozen shots or perhaps more. The natural tendency with reloaders is to push a hull's lifespan. It is better for performance however, and for your own peace of mind to discard a hull at its first sign of wear or irregularity. If the crimp looks like it is developing a crack, or the plastic seems to be separating from the brass base, or there is anything out-of-the-ordinary about the hull that causes you to look twice at it, discard it.

RESIZING H

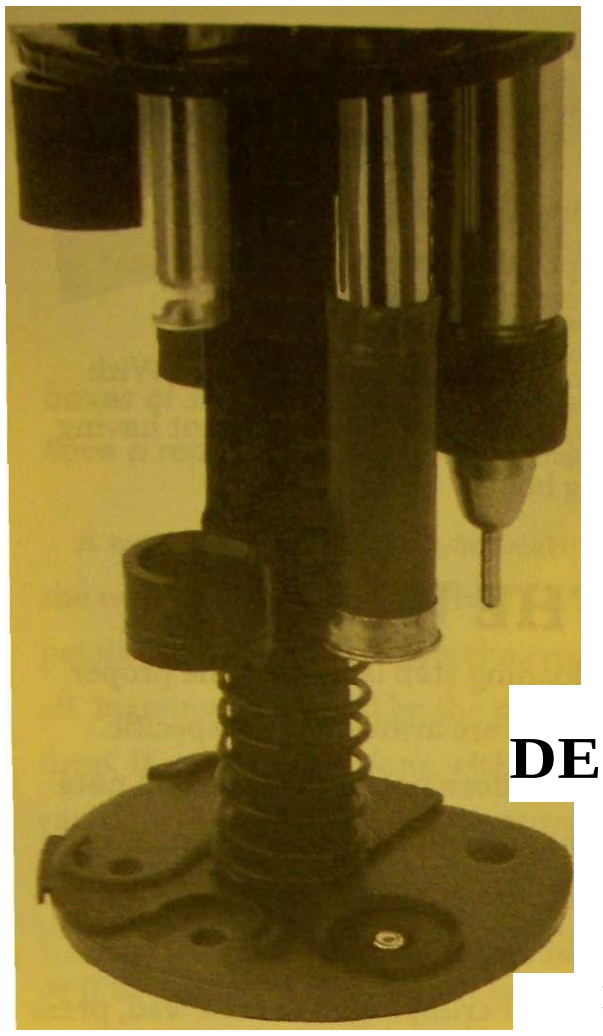
As a first step, a reloading press will resize your hull. When you fire a shot, the heat and pressure generated can enlarge the hull slightly, not enough usually to be visible with the "naked eye," but enough for a shotgun chamber built to thousandth-inch specifications to notice.

A press resizes a hull in two ways. It can use a steel-fingered sleeve to slide up on the brass and squeeze it or neck it down to proper size as a single step in the reloading process. A second method is to force the entire hull into a full-length resizing die at station number one. This die can then hold the shell tightly through the entire process of reloading and crimping.

Kurt Fackler of Ballistic Products, who wrote and edited the former edition of this book, says that you may occasionally run into a hull that is so oversized that resizing is impractical. "Rather than possibly damaging your equipment," he says, "throw the hull into the garbage. If your shotgun is producing these hulls, your chamber may be oversized. It is a gun problem, and you may need a new barrel."



When you reuse shells you need to make sure that the extreme heat and pressure from previous shooting has not enlarged the base or hull. After your visual inspection, your press will attempt to squeeze the hull back into perfect shape for your gun's chamber. If, for any reason, the hull does not "look right" or "seem right," discard it



Step one after resizing the bull Before you can put a new primer in, you must take the old primer out.*

DE-PRIMING

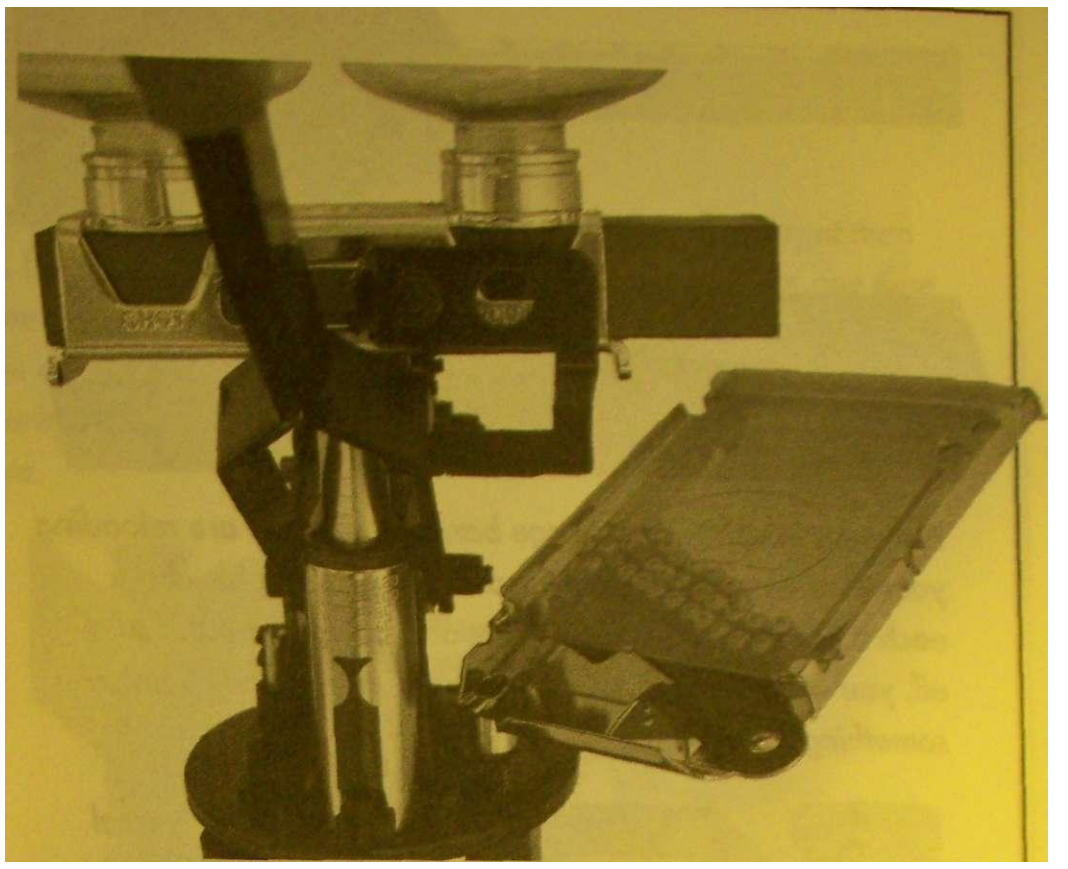
The next step, called "de-priming," involves removing the spent primer. This is sometimes performed simultaneously with resizing. Unless you are using a hydraulically-operated progressive press, which accomplishes these steps automatically with the tap of a toe, you must physically, although indirectly, push the old primer out the bottom of the hull with a pull of the lever. This step is gauge-specific, so be sure you have the correct de-priming pin in place. If this requires too much force, check for an obstruction in the hull. The base wad may have shifted. If, on the other hand, it is too easy, check the outside of the base for black deposits, which indicate that gas is escaping past the primer. (In this case, the hull should be discarded.) De-priming must not crush the hull's base wad as this can cause a drop in pressure for your next load. (Never de-prime live primers from hulls, either! Pressing a live primer out could cause it to detonate!)

RE-PRIMING

Any time that you handle primers, it is best to wear safety glasses and, in fact, this safety precaution is urged throughout the reloading process. You can so easily save your eyesight... and so easily lose it.

Modern shotshell primers have been standardized to the #209 size. Unless there is a problem that you should immediately address - which would be any problem at this stage - primer fit inside the base of a modern hull should not be a problem. If the primer does not fit easily into the empty pocket, do NOT force it, as a detonating primer will hurt you. Stop and look for the problem.

Primers are built with different levels of energy and each load calls for a specific primer in order to function properly



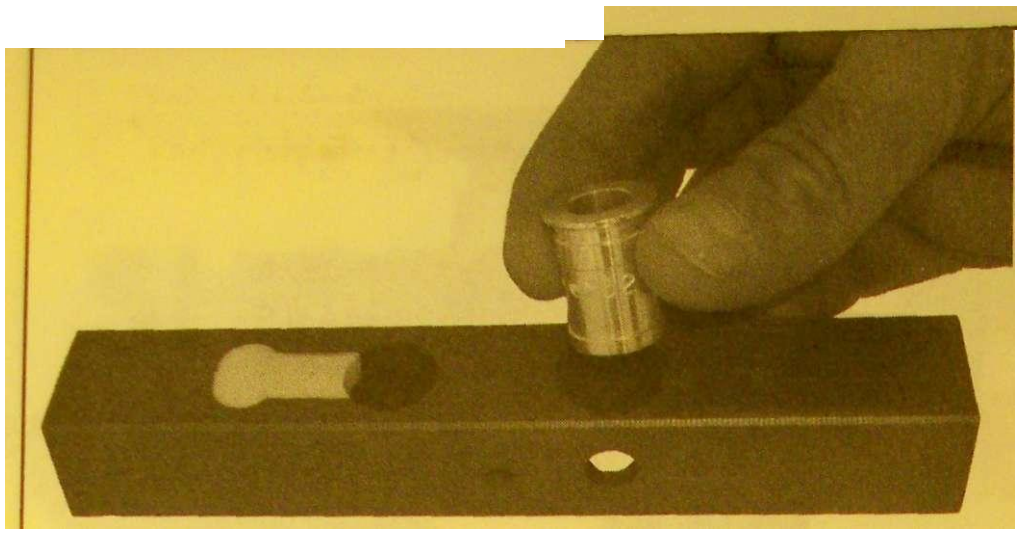
Upgrading your reloader from the most basic functions to include such accessory items (some would say necessities) as an automatic feed tray for tiny shotshell primers usually costs *a hundred dollars or so, but over the life of a press it is* we// *worth the expense.*

Use only the primer recommended in your load recipe. If you do not have that particular primer, get some. Otherwise, choose a different load.

It is easy to seat a primer correctly and the only correctly seated primer is one that is flush with the bottom of the base. Too deep or too shallow are really the only possible problems. Seat the primer too deep and the hull base may be pushed in so that it will not fire or not fire properly. In this case, you will have to adjust the primer seating post. If the primer is not fully seated, the shell may not feed through a semi-automatic or through a pump-action gun. Primers extending out beyond the level of the base have in rare cases been known to explode prematurely during action cycling before the gun is properly locked. This will cause your shell to literally, "go ballistic."

Proper seating is especially important in automatically indexing progressive machines such as the Dillon SL 900, which we are using as a demonstration model in this chapter. If the primer is not properly seated, it may catch on the edge of a reloading tool's base plate, halting forward progress.

Many machines now feature automatic primer feed and they are all subject to jamming. When a primer gets jammed in the feed system, you need to be patient and gentle. If this seems difficult, this may be a good time to get in touch with your feminine side. Never force the operating handle, because you could cause the stuck primer to explode, and this could cause a chain reaction with the remaining primers or, depending on your setup, with the powder. You will have to disassemble the mechanism carefully to remove the stuck primer.



Placing a bushing in a charge bar. Because you are reloading your own ammo, it is your responsibility to double-check each bushing, each powder type and your load data. After all, you will probably be the closest person to the chamber if something goes wrong.

Hodgdon's Universal Clays performs well in target and light field loadstar 12-, 16-, 20- and 28-gauge guns and, for heavy field use, is well-thought-of for the 12-gauge. The versatile Universal is also rated for pistol reloading from the 45 ACP to the 44 Magnum.

DROPPING POWDER

Now, be prepared for the powder to drop into the bottom of your shell, on top of the primer and below the wad that comes next. Your press (and accessories) will meter the powder either by weight or volume.

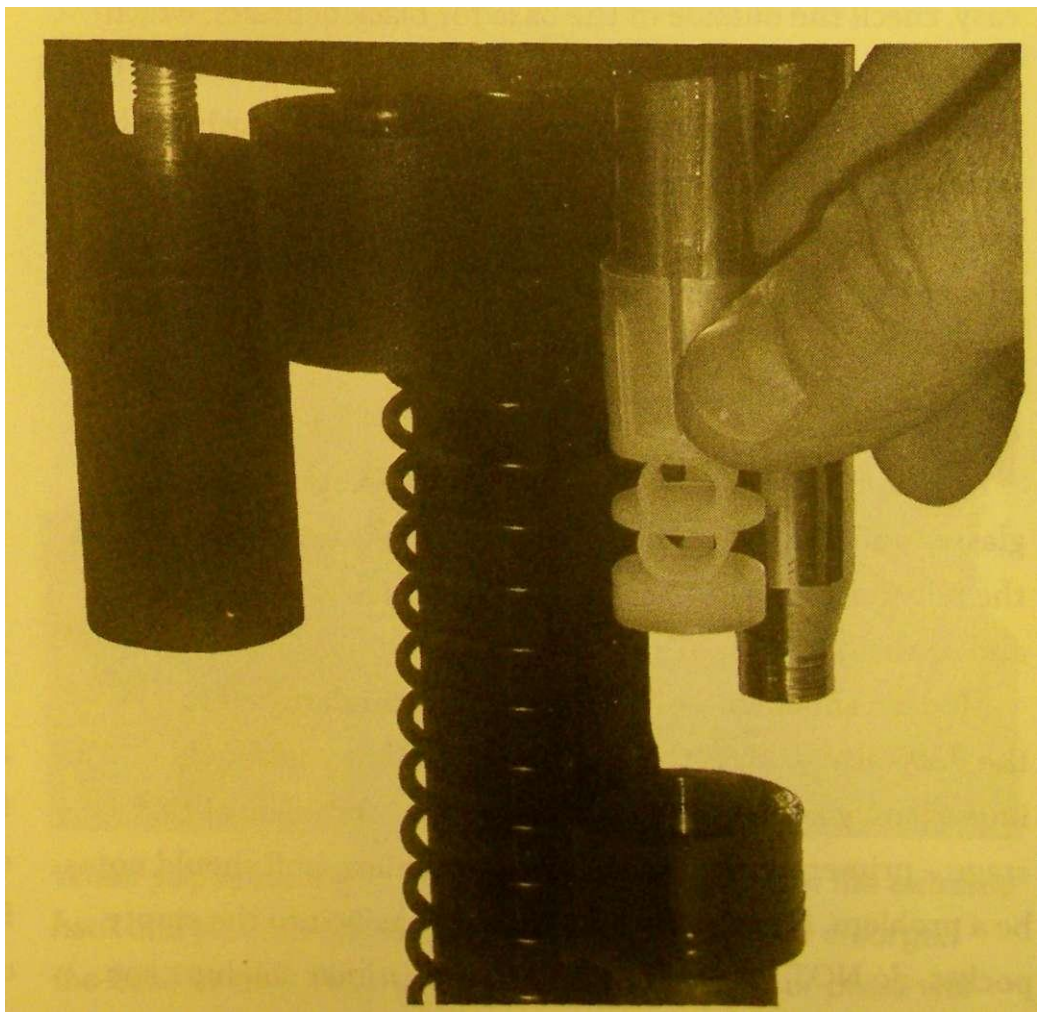
Powder is measured in grains. One ounce equals 437.5 grains, and 16 ounces, or one pound, are 7,000 grains. Remember this measure.

Every loader requires bushing adjustment for different loads. Most presses have independent, replaceable bushings, but some modern presses like the one featured in this chapter, the Dillon SL 900, have measuring and dropping systems for powder and shot that eliminate physically replacing bushing components.

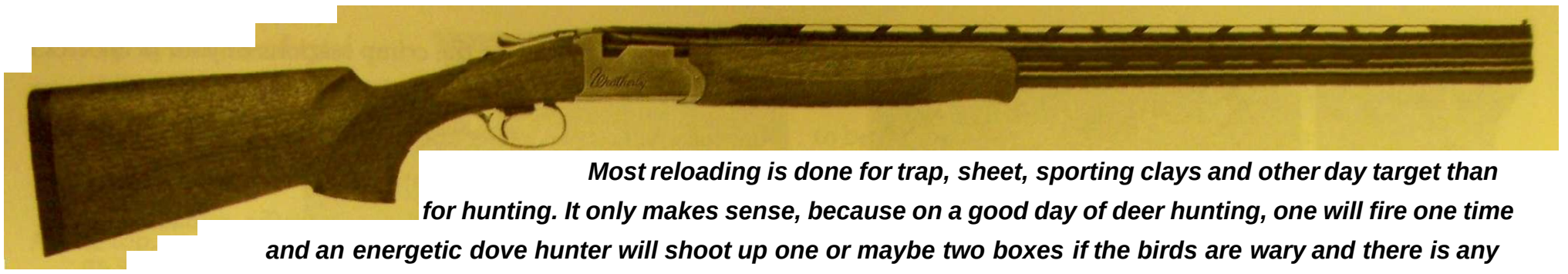
Using traditional single or progressive presses, the proper bushing for each specific load must be used for controlled measurement of a powder charge. Charts, provided by the manufacturer of your reloader, will specify which bushing to use for a specific type and amount of powder. (Some of those charts are included at the end of this book.) Different powders will drop at different weights through the same bushing, so you must correlate powder bushings with each load type that you assemble. Every time you change a bushing or powder brand or type, verify proper metering. After first settling the powder in the reservoir, verify your powder drops with an accurate scale. Then cycle the machine normally through several complete drops. Go ahead and make a few test rounds. With the reasonable cost of scales, there is no excuse for not having a good one on your reloading bench.

INSERTING THE WAD

Your next adventurous reloading step is placing the proper wad into the shell. Modern wads are available with specific heights and thickness. One wad does not fit all. (You will note in our loading section that there are dozens of different wad types for many different applications.) Wads need to be seated correctly on top of the powder and there is always a certain amount of flex needed for proper crimping. To seat a wad, press it firmly into the base of the hull. Do not apply so much force that you might tear or distort the plastic. Of course, unless you use a clear shell you cannot normally see this operation in action, so you must develop the right feel for it, not too light and not too heavy. Crushing a wad causes it to cant or lean inside the hull. This effectively destroys the midsection and ruptures the gas seal. Your load becomes unreliable. Kurt Fackler says that proper seating is "firmly on top of the powder."



Placing the wad in position for insertion over the powder. It can only go in one way correctly or you will be picking shot up off the floor for an hour.



Most reloading is done for trap, sheet, sporting clays and other day target than for hunting. It only makes sense, because on a good day of deer hunting, one will fire one time and an energetic dove hunter will shoot up one or maybe two boxes if the birds are wary and there is any wind at all. Shoot a round of sporting clays with a warm up of 5-Stand on the other hand and you can easily blow five boxes of shells through your barrels. Over-unders like the Weatherby Orion SSC are superior on the competition circuits and they have a reputation for handling shells that might jam in a semi-auto.

A workable method of wad seating is to observe the top of the wad as it relates to the hull's crimp folds. The top of the wad petals should sit just below the crimping line. In most, but not all, instances, this will be the proper wad height for your shot drop. If minor alterations, either up or down are necessary, you can do so by adjusting the pressure you apply (hydraulically or by hand) to the press handle.

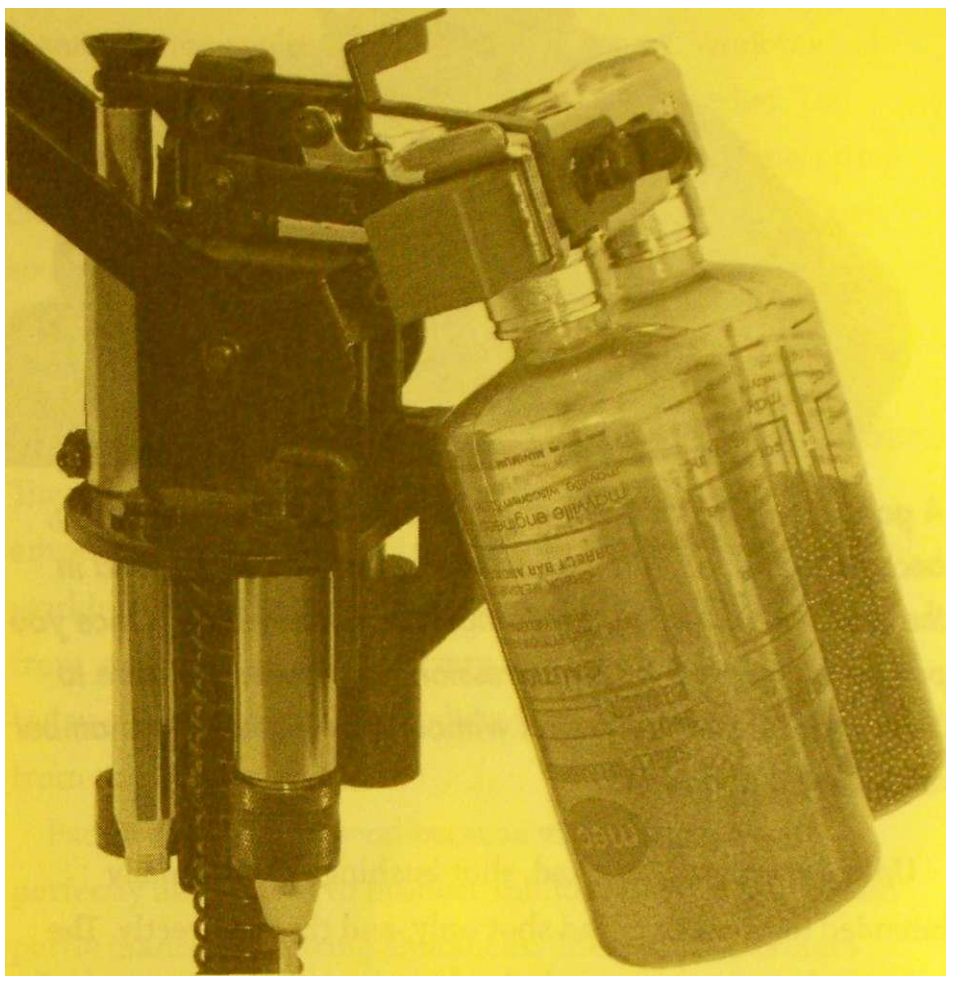
If for any reason, the wad protrudes from the top of the hull, or it drops completely out of sight inside the hull, something is wrong. Re-check your measurements and try again, first verifying load data. If necessary, contact the source of the load recipe, as there could possibly be a misprint. (This is why I recommend verifying each recipe with a reliable back-up source, at least the first time you load it.)

If your press uses wad guide fingers, get used to the fact that they occasionally must be replaced. Wad guide fingers sit directly above the hull at the wad placement station. These thin, usually plastic, fingers extend into the mouth of the hull, easing passage of the gas seal. Modern high performance handloads use precise gas seals, and they require careful handling at this stage. Tearing or crimping the gas seal here compromises the performance of your load.

Hunting loads often require that a filler wad be placed inside the wad/shotcup at this point. A filler wad can be felt, cardboard or cork. These wads are shaped like a disk and come in varying thickness. Should your load require a filler wad (or two), place it into the wad guide, just as you would like it to sit inside the wad column. Use the wad rammer to gently seat *it* inside and on top of the shotcup's base before the shot is dropped.

DROPPING SHOT

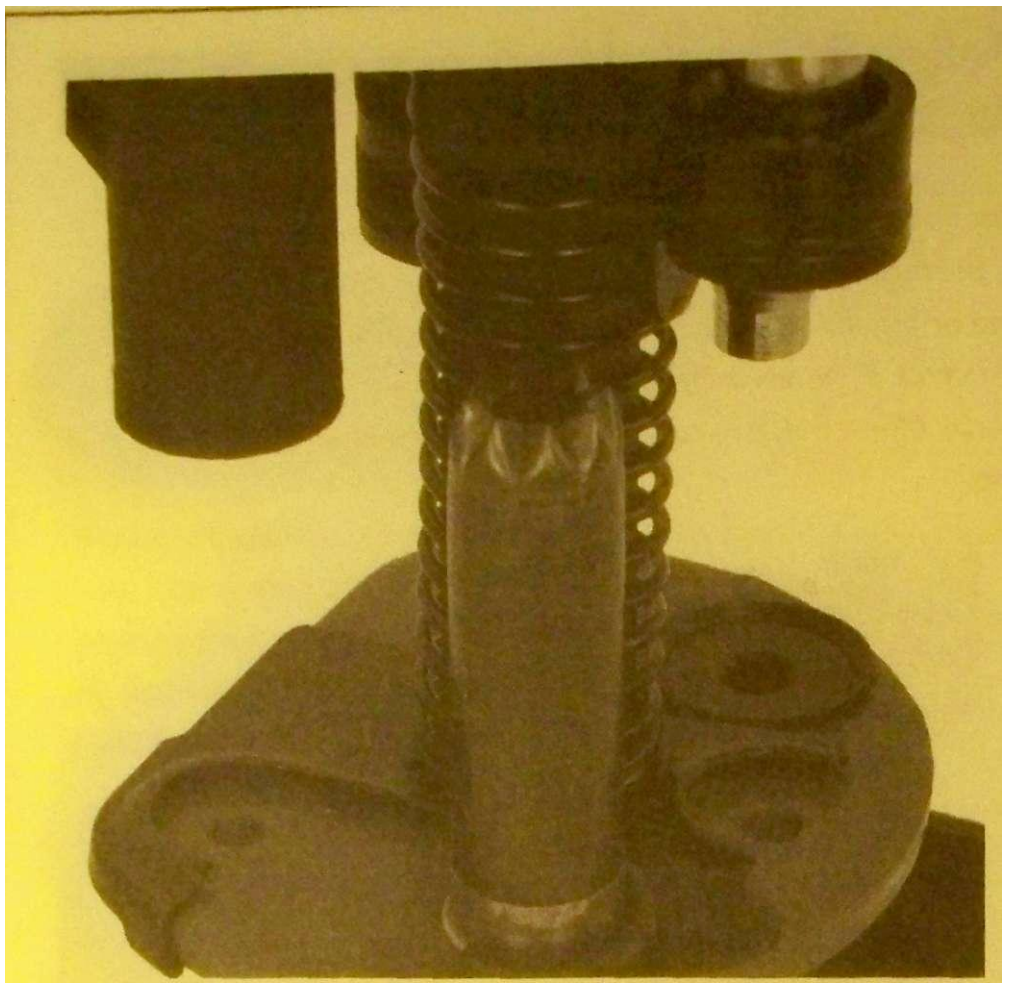
Shot drops meter through a charge bar, or a replaceable or adjustable bushing. Loose shot fills a cavity, an empty cylinder side the bushing, which is cut to the specific diameter required to accommodate a certain payload. Although it seems little primitive in the digital age, this method works quite [, especially with lead pellets #4 and smaller. For common trap, skeet and sporting days loads, you simply drop *in* the proper bar or bushing and proceed, because #7-1/2, #8, #8-1/2 and #9 shot flow like water and measure almost perfectly.



When you shop for a reloading press, look for special touches such as this handy flip-top on a MEC press. The ability to flip the top (the bushing bar with the jars of powder and shot) down makes your press easier to cover and will help prevent a spill if you inadvertently bump it

As shot size becomes larger, pulling consistent loads can become a problem. Larger pellets occupy space, just like smaller pellets, but those larger pellets need more "elbow room." In any given space, there is more air around and between them than there is around smaller pellets. You will also notice a slight weight reduction for every shot size increase. So when using any particular bushing, always verify the shot weight by pulling a sample or two after first settling the shot in the reservoir. Then cycle the machine normally several times. This only takes a minute.

Sometimes your loads prevent crimping, but you already know the rule: "Anything that affects proper crimping needs to be found and changed right away." If improper crimps can be related to your payload, something will have to give. Use your scale to weigh and verify shot payloads.



A good crimp is extremely important to successful reloading, because it ensures that the correct compaction of the load in the shell will create the right amount of compression. Once you pull the trigger, it is this compression that causes pressure to blow your shot out the barrel without blowing out the chamber or causing a dud round.

Unless specifically marked, shot bushings are normally intended for metering lead shot only, and that indirectly. The volumetric measurement of a bushing is a relative measure of a specific weight. That volume represents an approximation of a desired weight of shot. Perhaps this system is not flawless, but it is relatively efficient. To measure every payload by actual weight quickly becomes cumbersome unless you are only loading a few hunting shells.

Steel and non-toxic shot vary from the standard, which is still lead, on both the high and the low sides. Specific bushings or settings for adjustable rather than replaceable bushings have been worked out for steel, bismuth and tungsten polymer combinations. These settings cannot be interchanged.

CRIMPING: S j | CLOSING THE SHELL

Crimping your shells is the final stage in developing a complete load. A perfect crimp is necessary to develop the load s exact pressure ceiling. Too deep, and pressure builds unnecessarily. Too shallow, and the shell can literally fall apart, allowing the shot to dribble out of the hull.

Developing the crimp and starting and finishing the seal are normally a multi-station process. For different payloads, powders and other ingredients, you will need to carefully check and perhaps adjust the crimp stations of your press. Experience here probably requires that a few shells in each new load will not be perfect before you decide what precis* *ziy* is required. Crimping is "not a static setup, once achieved, never altered." In other words, like driving in traffic, reloading is not something you can do effectively while you are watching an exciting ball game on television or preparing the family dinner.

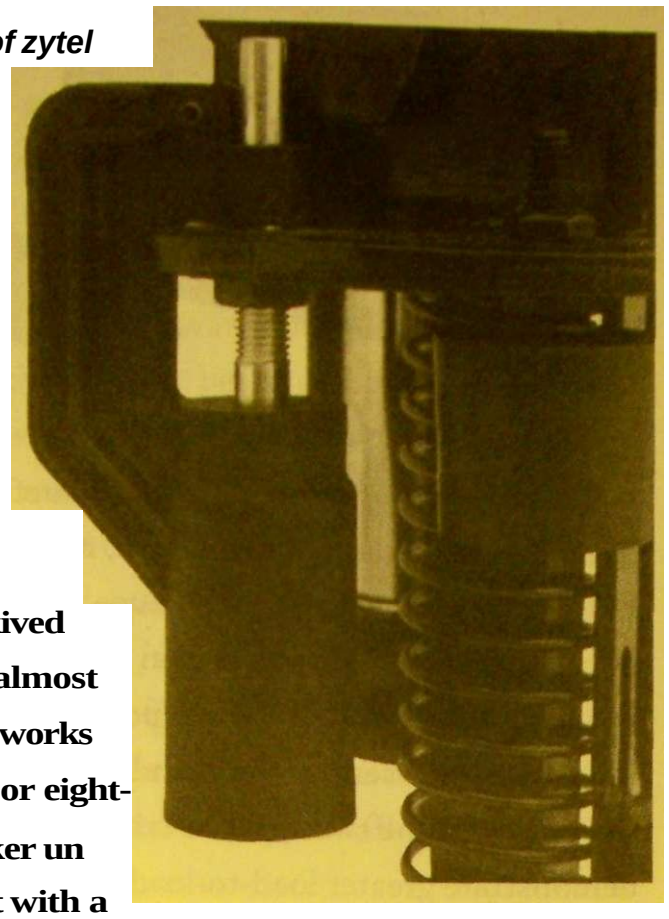
Unless they have a roll-crimp, your hulls will have either a six- or an eight-point fold. Traditionally, heavy hunting loads filled with larger size shot used the six-point crimp; the relatively lighter target loads used an eight-point crimp. Nevertheless, there is no reason that you should have to continue this traditional practice.

A ballistics laboratory could not quantify a difference in efficiency between the two crimp styles. So to determine which crimp-starter to use in your press, simply count the folds in the top of the hells you are reloading. You can do the same with the crimp-starter itself if the six-pointer and the eight-pointer look alike on the outside, and they often do. It is important to use the proper crimp-starter, because folding a six-point hull with an eight-point crimp starter for example is going to make a mess of your hull. And duct tape, though useful in so many areas of a man's life, is not designed to rescue you from this mess.

If you use new hulls, you can choose the crimp that most suits your particular whim, but the purpose of reloading - at least, one of the purposes - is to save a few bucks so that you can shoot more. This means recycle and reuse, not buy new hulls. So, what type of crimp is best may depend on the manufacturer s suggestions or the type of hull you buy at the gun club. If you purchase the bag marked "Miscellaneous 100" for 2 or 3<t each, you may have to sort for gauge as well as sorting for crimp.

New hulls may be skived or un-skived. Skived hulls are thinned and taper to a fine edge at the top rim, whereas un-skived hulls have thicker sides, and they are not tapered.

One of the first areas that will show wear on a shell foot has been used a few times is the crimp, and it is one of the most significant areas for new reloaders to examine before a used shell is set-up to be filled.



Close-up of outside of zytel crimp die on MEC *reloader.*

At the top, an un-skived hull seems as thick and as bend-resistant as a dime. This thickness matters because a thinner hull, a new skived hull, can be folded in almost any manner and thus works well with either a six- or eight-point crimp. The thicker un skived hull works best with a lesser amount of folding and should usually be programmed for the six-point crimp.

Larger shot is usually contained in hulls with six-point crimps whereas smaller shot is more often found in hulls with eight-point crimps. Sometimes, the stacking of large shot makes crimping of any kind a chore. The large pellets will occasionally bulge upward, making closure difficult and even off-center. The size of the shot is just one of those variables, like the kind of hulls you use and the machine you have, that may force you to experiment a bit with closing your shells. Some machines work better with six-point crimps and others with eight-point. (Yes, if you are unhappy with the way a shell turns out and if you are careful not to mix components, you can pour the shot and the powder into the cup of your measuring scale and then back through the top of the loading wells.)

As I have said, do not agonize over the six-point or eight-Ioint crimp decision. Go with what works for you and your lachine. Adjust the crimp starter until you can see that folds Iive been introduced to the hull. Closing your shell is often a ulti-stage process and starting the crimp is only step number one. If you overdo it with this adjustment, the crimp may smash together in the center during the final stage.

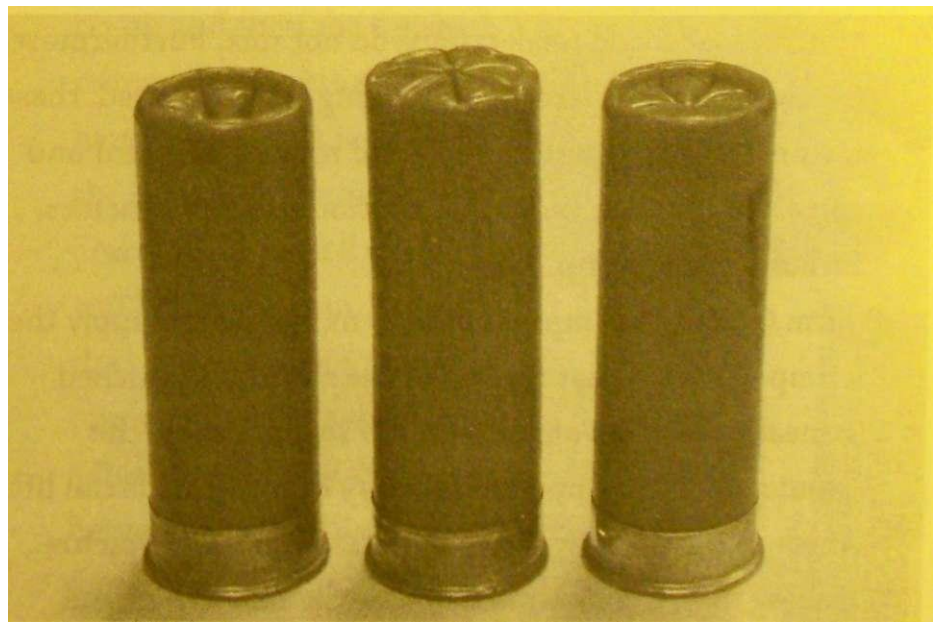
In applying crimps, we often refer to a hulls "memory." This means that once plastic "takes a *set? or* is creased, it will Iually return to this shape the next time you bend it. New, dfired hulls may have to have folds introduced to the plastic slowly working the hull into the crimp starter station a couple of times before moving on to the final crimp station. Ij is especially true of hulls with thick, un-skived tubes, en you can plainly see that folds have been introduced to hull tube, you can proceed to the final crimp station.

The final crimp station doses the hull, leaving what should be a flat, level surface across the top. You want the center hole to be as small as possible, without being crushed together completely, and to form a spiral swirl. Shot must not dribble out of this hole!

In general, the folded crimp will provide you with a positive closure that is about 1/16- **to** 1/10**-inch deep. Overly deep crimp centers contribute to higher pressures in loads. However, all hulls are not created equal and proper crimping depth requires some applied judgment on your part. Work toward a depth that is sufficient to hold the crimps together. You really ought to take notes on the specifics of your final crimp decisions and keep these notes in your reloader s handbook so that you can return to them later. This could save hours of experimentation (and I admit that my own note-taking is neither complete, regular or well-organized).**

Use crimps applied to factory ammo as your guide to quality. These days, the crimp depth, quality and finish of factory ammunition are outstanding. Factory shells display beautiful, working crimps on just about every load and you can learn from studying their work. Every reloading tool on the market today can be adjusted to produce just as good a crimp as those from the factory.

Factory loads look good because manufacturers are perfectly automated to produce millions of lawsuit-free and performance-enhancing shotshells. These manufacturers use a formula of perfectly sized new components and an exact amount of shot with the component column height set precisely right to produce a beautiful working crimp. You can lean how to make this happen, too. (For starters, read your machine's operation manual.)



These shells illustrate improper and proper filling of the hull. The hull on the left has a very deep, concave crimp while the hull in the center appears to be overfilled. Incorrect hull fill and crimp closure will affect the pressure inside the chamber and barrel of your shotgun and will negatively effect shell performance.

Crimping problems most often occur when components are mismatched. For instance, a low-volume, compression-formed hull is not conducive to loading heavy magnum shot and slow burning powders. These mismatched loads can become difficult to work with, and are inconsistent when crimping.

Beware of component swapping, too, because the difference in crimp height between hulls can affect your load performance. A change in hull type can undo an otherwise good fitting load, perhaps offering a too-deep or a too-shallow crimp. Modifications to the tool will not sufficiently provide for the 1/10 inch (even more in some instances) hull depth differentials found between low-base hulls and high-base hulls. Many hulls, even from the same manufacturer, have quite different internal depths.

Crimp Notes:

a) Filler Wads - When using filler wads to raise the height of the shot column for a solid crimp, be aware that the size of the shot used can influence the height of the column inside the wad. A 1-1/4-ounce load of #4 sits lower in the shotcup than 1-1/4 ounces of #T. Filler wads in the base of the shotcup are there for the convenience of the reloader. Many load combinations do not require filler wads of any size.

b) Steel Loads - For steel loads, fold-crimps must be seated tightly on top of the shot column. Worn-out hulls or those made with weak, laminated plastic are not good for loading steel shot. Compression is lost when laminated hulls fall apart, wasting your loading efforts and components. Avoid buying hulls with built-in flaws just because they may be cheap.

c) Burn Rate - Slow burn rate powders (used in most hunting loads) and weak crimps do not mix. Furthermore, in cold weather, where many hunting loads are used, these factors come together to cause dud rounds. Efficient and consistent ignition requires attention to a lot of factors, including your crimp.

d) Firm Crimps - Crimps must be firm, but do not apply the crimp so deeply that the top of the shotcup is pinched beneath the edges of the crimp. If this happens, the stout plastic shotcup used in heavy hunting loads can lift the hull plastic right out of the brass rim when you fire. Failing that, it may stretch or tear the hull in half and cause your chamber pressure to climb dangerously. This situation can often be remedied by adding a filler wad beneath the shot, because this raises it slightly. Many hunting loads by the way are happy when you top them off with a thin, .030-inch overshot card wad, which you can cut from a Manila folder if you wish.

Remington's "Managed Recoil" Rifled Slugs use a roll crimp to close the hull over the slug.

ROLL-CRIMPING

Roll crimping offers a number of benefits over the more conventional folds, and these days, it is easy to attain excellent roll-crimps for every shotgun gauge. You can not alternate between fold- and roll-crimps on the same hulls, however. This would be the equivalent of component substitution, which is against the essential commandments of safe and effective reloading. Of the two types of crimps, roll-crimps actually demonstrate greater load-to-load consistency of tested speeds and pressures.

Because you use an over-shot card, the length of the hull area required to form a roll-crimp is about half the length required for a fold-crimp. Therefore, much more of the total overall hull volume is available.

Most factory slug loads use roll crimps to secure a slug, some with and some without cards. Besides superior seating of the projectile, a benefit of roll-crimped slug loads is load identification. The shooter can see at a glance whether or not the load in hand is a slug load.

MARK YOUR SHELLS

Since reloaded shells may have nothing to do with the original markings or the original boxes, you are faced with needing to mark your loads. (This will save you from having to cut one apart in the field to separate your duck and goose loads from your trap loads!) A permanent marking pen will do the job as will special shotshell stamps from Midway and Ballistic Products. Short range, long range, rabbits, spreader loads, different size shot... write it all down on the shell or on a card inside the box and you will be less inclined to forget or make a mistake.

HANDS-ON RELOADING WITH THE DILLON SL 900

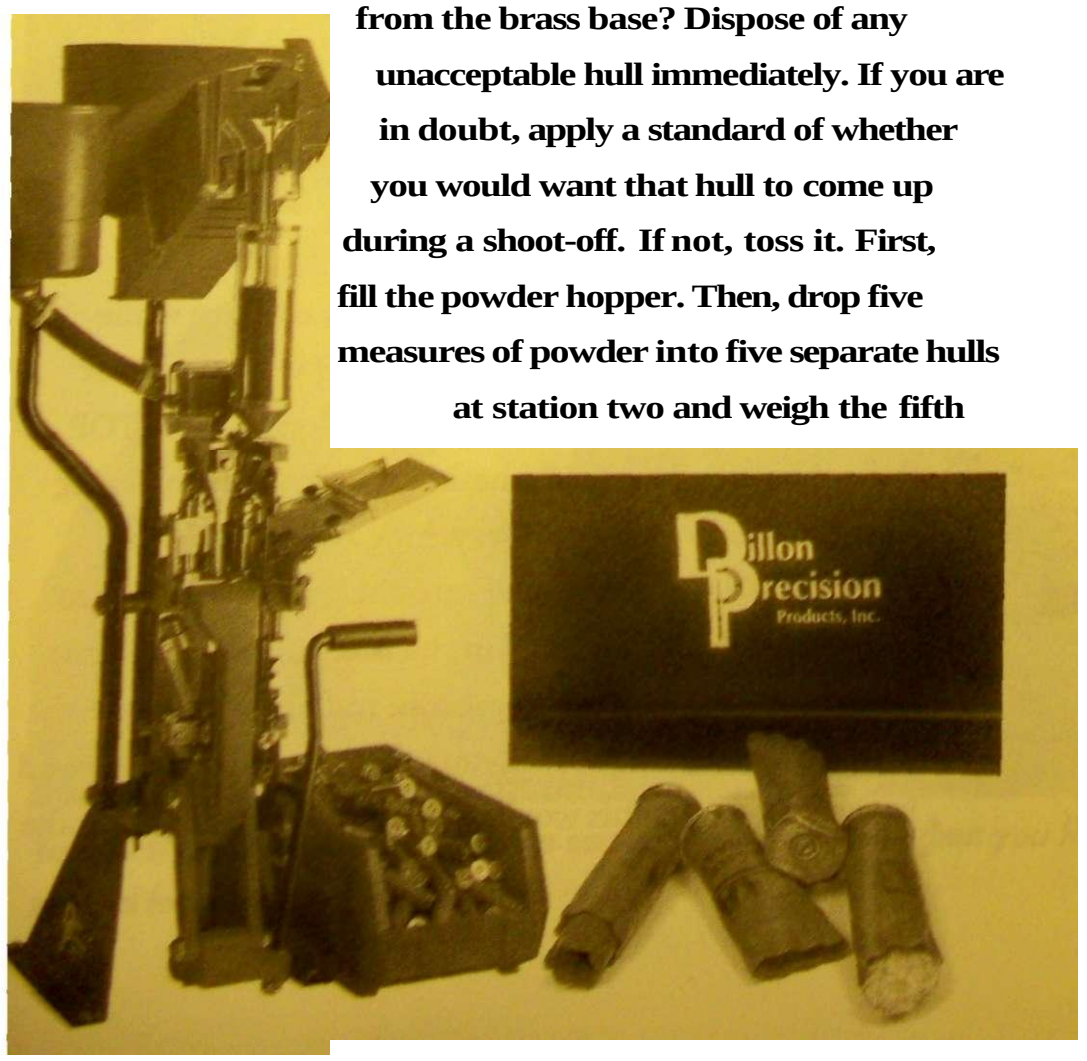
Whether you are using a single-stage or a progressive shotshell press, the individual steps are very similar indeed. While it is difficult to generalize about the specific steps taken in the reloading process due to the characteristic differences between the many makes and models of shotshell presses, we can learn from examining in detail the steps required

in operating a specific press: in this case, the Dillon SL900. The following step-by-step examination is meant to be of representation value only; obviously, you should always follow the instructions supplied with your own particular brand of shotshell press.

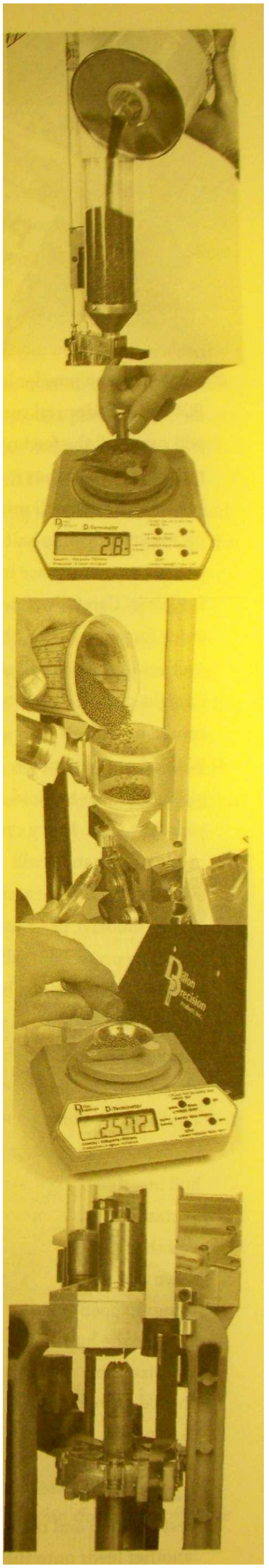
The Dillon SL 900 has case-activated powder and shot systems to eliminate the need for bushing changes and resulting powder and shot spills. This is very cool, and it can work quite well, but it makes you even more responsible for monitoring the system and double check throws by weighing load components independently. According to Dillon, the built-in adjustable powder measure is good to within 1/10 grain. The shot hopper holds 25 pounds. By switching tool-heads, you can switch gauges (the SL 900 loads 12-, 20- and 28-gauge) without having to reset your dies and measurements. The case feed and priming systems are automatic.

What follows will be an illustrative, but necessarily abbreviated overview of the procedures required to build a complete shell from components on the SL 900. The run-through is designed to show the general steps involved, not to teach you how to use this reloading machine. For a thorough a discussion of the steps involved, see the SL 900 Instruction Manual, Version 3.1.

1) After you set up your press, but before you begin loading shells, Dillon suggests that you practice by building a few test shells. This gives you a feeling for how the press operates and it is an excellent time to examine your hulls one final time for obvious defects, rocks or other cases wedged inside, dirt or mud. Watch for hulls that may have been stepped on and if they can be squeezed round, you have an opportunity to judge whether they will hold shape again. Are any hulls cracked or has the plastic separated from the brass base? Dispose of any unacceptable hull immediately. If you are in doubt, apply a standard of whether you would want that hull to come up during a shoot-off. If not, toss it. First, fill the powder hopper. Then, drop five measures of powder into five separate hulls at station two and weigh the fifth on your powder scale* This double-checks your accuracy and the machine's settings. Repeat as necessary, Dillon says, "until you are happy with the powder charge"

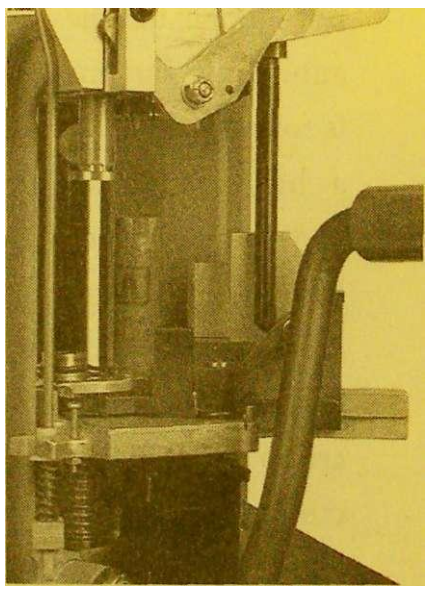


2) Now, you are going to do the same thing with the shot. First, add a small amount (not the full 25 pounds yet!) of shot to the shot dispenser. Then, load a wad into the wad arm receiver. Load the shell onto station three and then remove it and pour the shot back into the shot dispenser. Repeat a few times and then weigh your shot charge. Adjust the shot bar as needed and test its accuracy. After a few reloading sessions, this will become instinctive although not, I hope, mindlessly automatic. The final test is to check your crimp on a shell with the wad and shot in place. Place your filled hull into station four. A couple pulls of the roller handle will apply the initial crimp and then the finished crimp. As you return the handle to its rest position, the completed round will fall down the shotshell chute and land in the bin. This is the time to inspect the test round and make any crimp adjustments necessary. Remember that this is a dummy round and you can dispose of it or recycle its components. If it is not perfect, this is the time to make any adjustments with least effort and maximum effect.

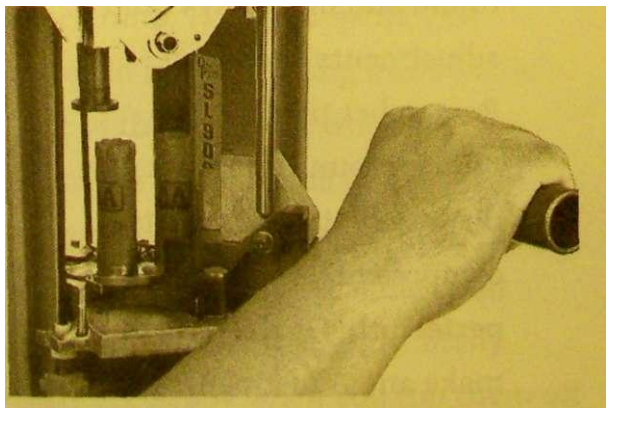


3) With shot and powder loaded, it is time to fill the SL 900's casefeeder and turn the unit on. The casefeeder will run until the feed tube has filled, at which point a microswitch will shut it off automatically. Now, load a box of new shotshell primers. Slide the cardboard jacket back, exposing only half of the first row of primers. Turn the box over and place its leading edge onto the primer feedplate. Carefully slide the cardboard jacket off. (An index finger placed on the plastic tray that holds the primers in the box will steady it.) Lift this primer tray straight off and straighten any primers that may have turned onto their side.

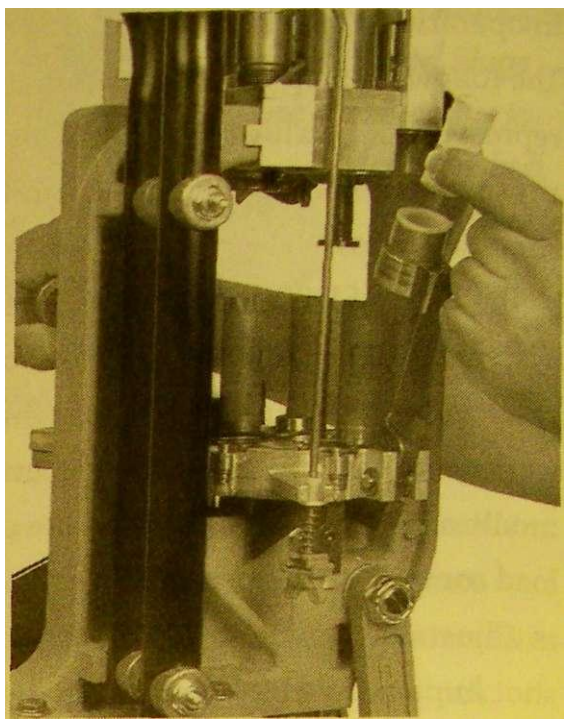
4) With all components in place, it is time to build your first shell. Every cycle of the roller handle will eventually build a new shell on this modern, progressive reloading press. First, all stations will be empty, but when you move the roller handle down and then back up to its full aft position, a hull will feed on to the shellplate. When you push the handle away from you, the hull inserts fully onto the shellplate and a primer appears at station two. (Remove this first primer and set it aside.)



5) Pull the handle down and two things happen at once: the hull is resized and the old primer is removed. Return the roller handle to its rest position and the first hull moves to station two and another feeds onto the shellplate.



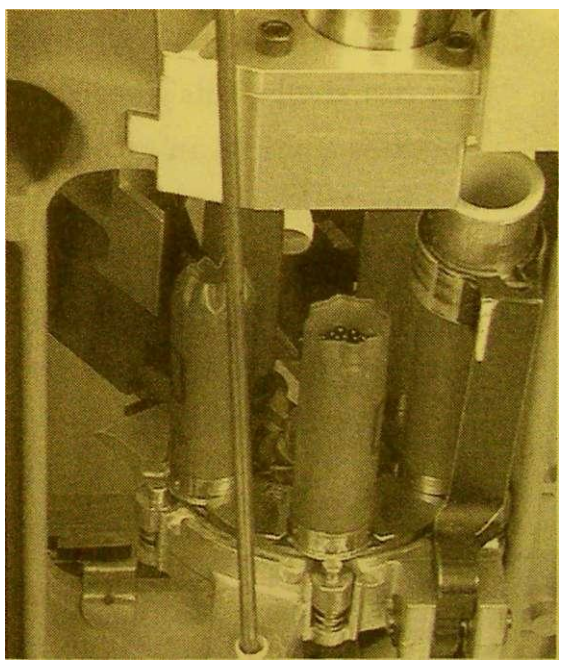
6) Push the handle aft to seat a new primer into the first hull at station two and another hull is fully seated into the shellplate at station one. (Dillon cautions that to ensure that you have fully seated the primer into the hull, stroke the operating handle to its full aft position.)



7) With the next handle pull forward and down, your first hull gets a charge of powder at station two. Return the handle to rest and the hulls advance while another hull feeds onto the shellplate.

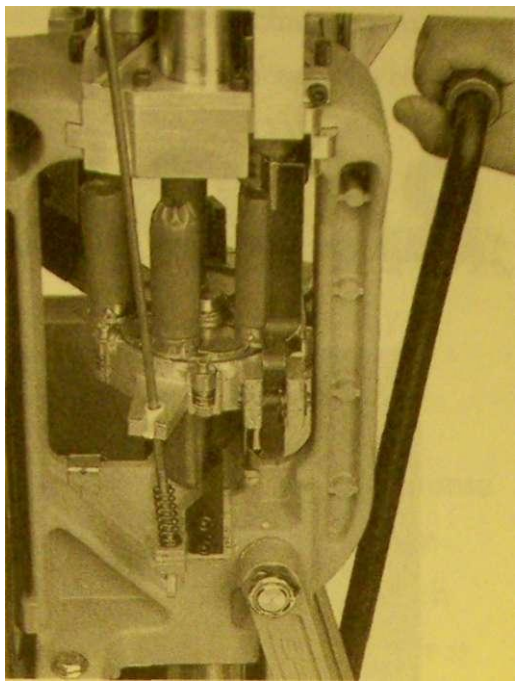
8) Push the handle to full aft and hold it there while you place a wad into the wad guide, which swings forward for you. This same aft stroke seats the new primer into the hull now at station two and the hull at station one is fully seated into the shellplate. Release the handle.

9) Pull the handle down again and the first hull moves to station three where the wad is seated and it receives a charge of shot. Every time you cycle the handle forward and back, hulls all along your assembly line are being processed - resized, de-primed, primed and so on.



10) Raise the handle to full aft and all hulls advance while the first hull advances to station four. If you encounter resistance anywhere in the process, Dillon warns, STOP. Never force the handle. Something is physically blocking your progress. Assuming everything is fine, push the handle aft to seat the primer into the hull at station two and place a new plastic wad in the wad guide. (Until you become accustomed to the process and begin to establish a pace, you may forget that you must manually place a wad in the wad guide. This would cause a problem later, so take care.)

11) Move the handle down and your first hull is being pre-crimped at station four. When you return the handle to full aft. all hulls will advance and the first hull will move to station five.



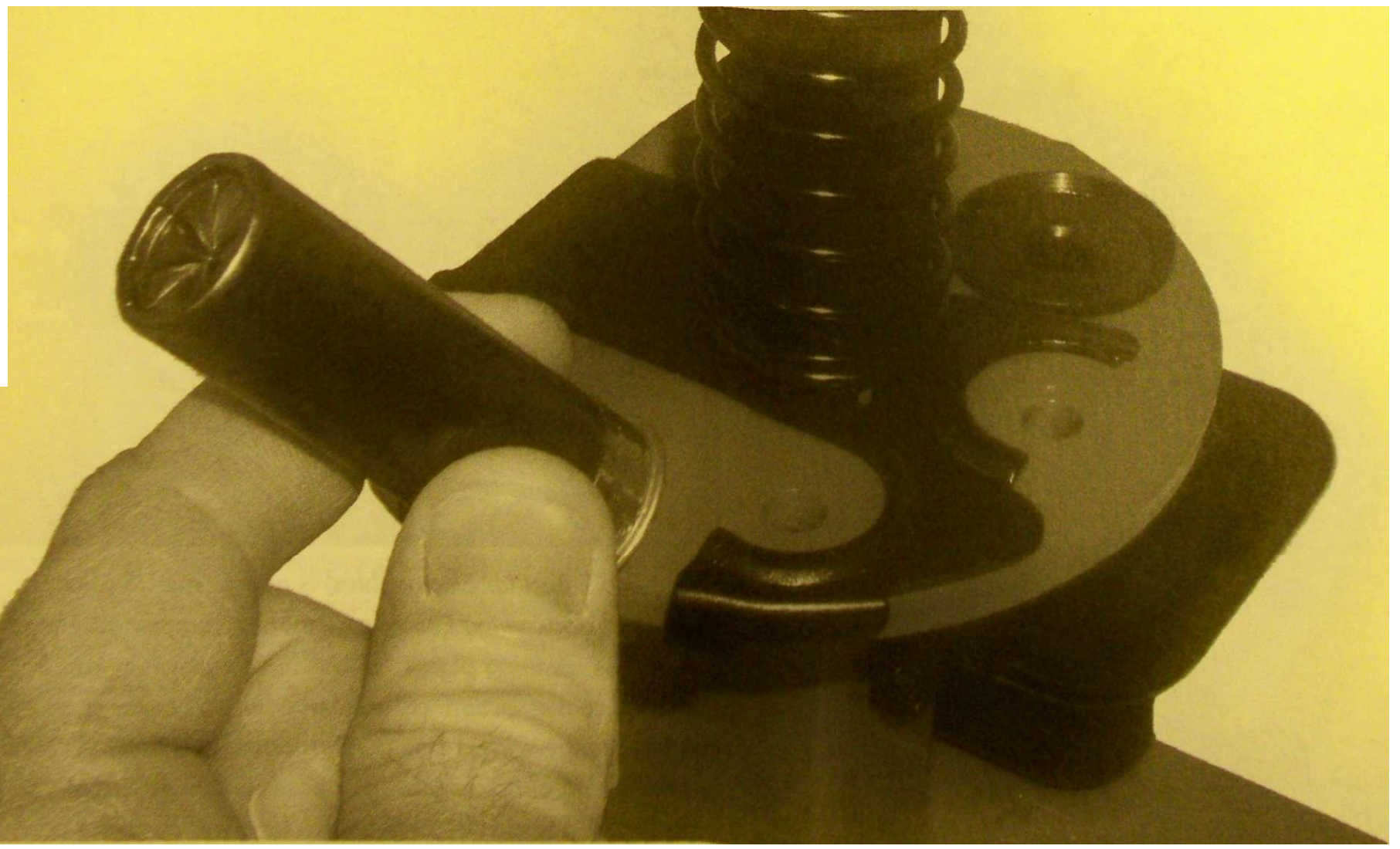
12) Move the handle down again and the final crimp and seating die finish dosing the top of your first shell. A final seating plug presses the hull back down and below the top. When you return the roller handle to its rest position, the first hull advances and slides out of the machine. It is ready for you to drop it in your gun's chamber and, glowing with pride, pull the trigger. (Like most handloaders, you will probably hold your breath for the first few shells until you realize that indeed, you have followed directions correctly and your shells are perfect.) By this point in the process, all stations on the SL 900 are filled with hulls and after this, every complete stroke of the handle builds one completed round.

TIPS

Dillon notes that you should "pay dose attention to the hulls, noting the changes that take place as they go through the machine. Pace yourself when operating this machine. Do not crash the roller handle down against its stops. Do not snatch the roller handle upward. It should take two or more seconds to move the roller handle from its rest position, down, and then back to its rest position."

When it is time to either switch to another shot size (or to quit loading for the day, although if the machine is in a secure area and you expect to come back to it soon, you could leave it fully set up with powder and shot) place a plastic container or coffee can next to the shot dispenser drain. Rotate the plastic shot drain with your index finger and hold it there until all the shot has emptied. Any remaining shot in the shot bar and dispenser can be easily removed by running a hull through the machine.

To remove or change powder, first remove the SL 900s powder bar rod. Remove the screws holding the clamp and slide the clamp away from the powder die. Then remove the powder system and pour the powder from the hopper back into its original container. Now you can turn the powder system upright and position the unit over the mouth of the powder container, and cycle the powder bar with your thumb until it is completely empty.



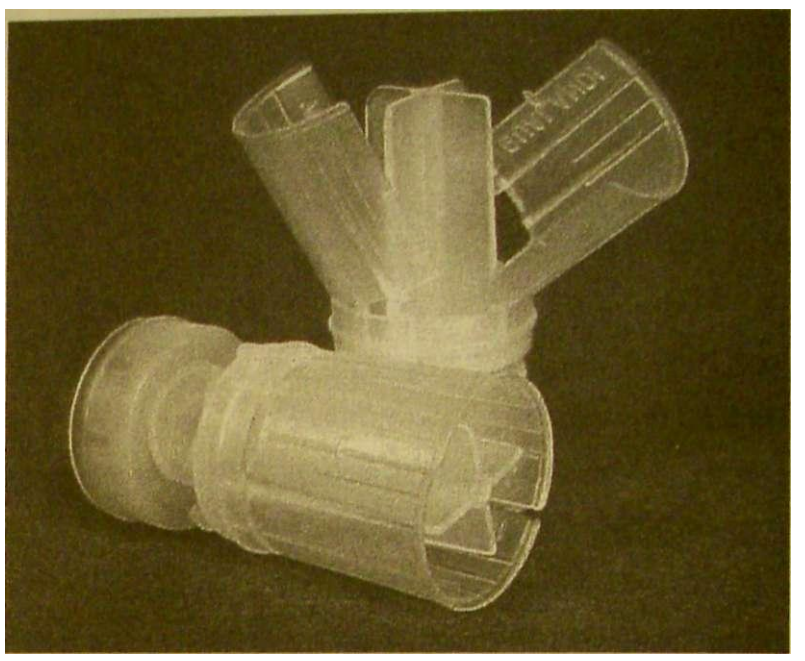
four 6ni finished reload will be a source of pride - and when you fj$_{re}$ it successfully to break a clay or bring down a quail, your second feeling maybe relief!

Chapter 7

ALL-WEATHER RELOADING

Not every day in the field or at the shooting line will be a bluebird day. Nevertheless, after some of those three-dog nights in early winter, you are just going to have to call the Springer spaniel, grab a handful of reloads and climb in the truck to see if any grouse are flying at Shiawassee Refuge. Or you will arrive at the sporting clays course in San Antonio only to find temperatures hovering in the mid 90s with a humidity level at practically **100** percent with thunderstorms threatening. It is time to break out the sunscreen. The best thing about reloading - other than saving some buckage - is that, after a little bit of study and experimentation to see what works best in your gun, you can customize loads to parallel the conditions and your shooting needs. Then, whether you bring down a pheasant or run **100**-straight is up to you.

Instead of thinking that you are simply handloading or building shotshells to save some money, why not approach the reloading bench with this in mind - that you are building performance loads. Imagine the success that derives from your additional time and attention. Think with the end or the



The DX12 is a one-piece plastic wad with an integrated X spreader molded inside. According to Ballistic Products, the X shape is "the best method for quick spreading patterns with even pellet dispersion." This wad loads well in the 7/8- to 1-1/16 -ounce range. The DX12 is designed to produce rapidly widening patterns with nearly any choke. Use it to build for quail and close-range shooting at small game.

Helice or ZZ Bird (or Electrocibles) is new to the US after making inroads in the European shooting community. The idea is to hit the spinning plastic "birds" hard enough to knock the white center section, called the "witness," away from the shnted orange wings. One person shoots at a time, 26 meters behind a nng of boxes that spin these birds away from you at high speed. You do not know which bird will be flying next but you have two shots. The preferred load for a 12-gaugei* 1-1/8-ounces of #7-1/2.

shooting objective in mind. That thinking will change your performance, your success and eventually, your satisfaction with reloading.

SHOOTING AT THE EQUATOR

Hot days increase the pressure inside loads, especially in large hunting loads packed with slow-burning powders. The type of powder used however, does not have as much influence on increased pressure as does the amount or volume of powder thrown in the load. A 10-gauge charge using the largest volumes of powder, or even a heavy 3- or 3-1/2-inch 12-gauge load, will hit you harder with recoil when you fire it in 90-plus-degree temperatures than it will in cold weather. Of course, every one of these big loads reacts a little differently to heat. Here is the worst-case scenario. For a big load with a lot of powder, one can expect a rise of about 1,000 psi for every 10 degrees over 70° F. Smaller target and upland game loads, with smaller charges of powder, have a much smaller rate of rise and a lower peak, possibly as low as 200 psi for every 10 degrees over 70° F. Therefore, you need not make any adjustments to trap, skeet, sporting clays or small game loads for high temperatures.

In excessively high ambient temperatures, the powder's burn-rate becomes the variable factor. It is not one specific powder, either, for all powders react to heat (and to cold), and ambient temperature must be considered if we handloaders want our shells to operate at peak performance ... and by "peak performance," I mean "precisely as we expect them to operate, neither slower nor faster/' The more powder contained in one's load, the greater the reaction to temperature one can expect.

Here are a few steps you can take to keep loads operating as they should or as tested in the laboratory at 70 degrees Fahrenheit, by reducing high temperature load stress:

Primers: If the load you are using calls for a magnum primer - which, by burning hotter and faster, produces greater immediate pressure - ***consider*** switching to a standard, or cooler, primer. If a CCI209M is called for, think about switching to a CCI 209. A simple primer change can affect a load by 1,000 psi and sometimes even more, a fact that should open your eyes regarding random substitutions. However, do not then use these loads indiscriminately in cool or cold weather because the result will be shot dribbling meekly out your barrel rather than flying with the authority you need to bring down a rooster pheasant.

Powders: If you know the day is going to hot, think about reducing the powder charge by five percent or 2 grains (in the 12-gauge), whichever is greater in your particular load. This tiny change will substantially reduce pressure ***on*** a hot day, perhaps by as much as 1,000 or 1,200 psi! Do NOT, however, perform the inverse operation to accommodate cold weather. Some powders perform at peak at much lower temperatures than others.

Crimps: It is an old reloaders trick to crimp hulls more deeply for cold days as this will sustain powder ignition and create extra pressure for combustion. You will get the same result on hot days, (A deep crimp is considered greater than 1/8-inch from the rim to the surface of the crimp.) If your reloading instructions should call for a "deep crimp" think about how you are going to use the loads. Some sources may not know that deep crimps are conducive to increased pressure, but you do!

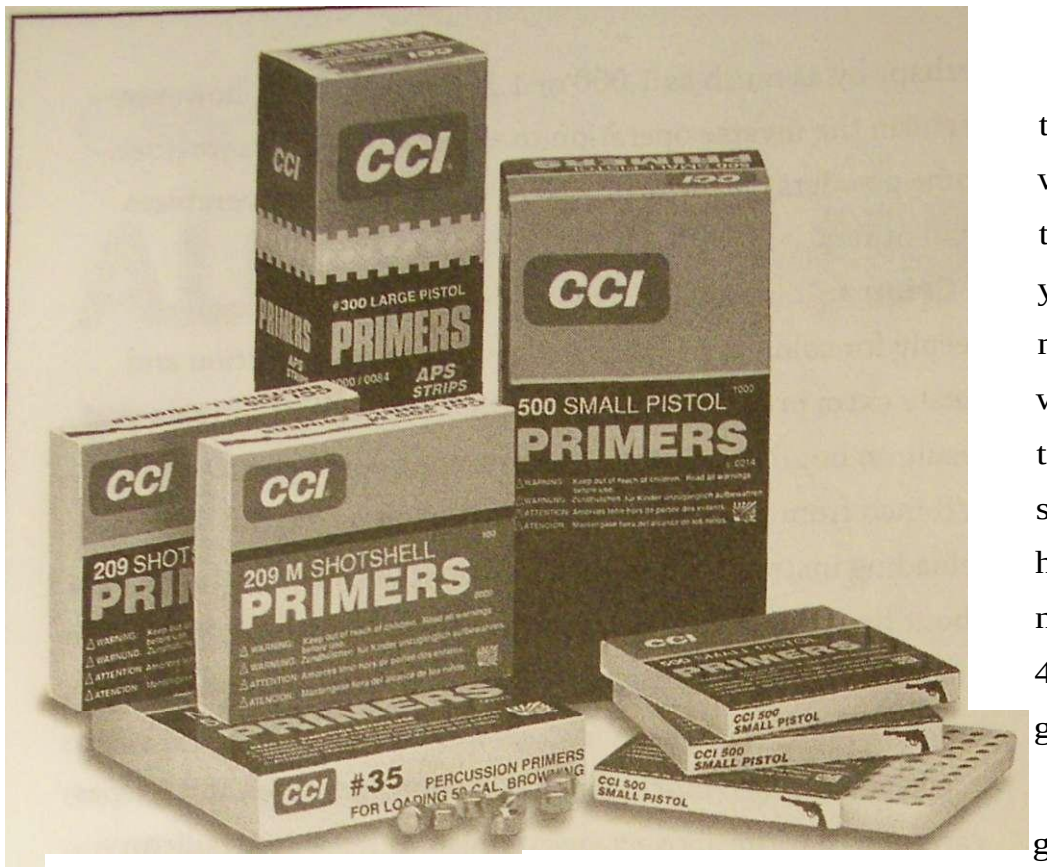
I have talked so much about following directions and recipes carefully that the above suggestions may seem contradictory. In a sense, they are. The idea is to search for loads that reflect the real shooting conditions, not necessarily the ideal 70-degree F laboratory day.

If you change any recipe, it is therefore incumbent on you to *mark the shell* so that you will remember what you have inside and for what purpose. I know many hunters who sleep late and, when the rooster crows, they grab their gun and shells in one hand, tie their boots with the other, hop out the door on one foot with hot coffee in a cup between their teeth, and rush out the door to meet their hunting buddies at dawn. Surely you are more organized and disciplined, but it illustrates why marking your shells is so important. Marking saves you frustration and even perhaps some embarrassment. You may not use all of those cold weather shells and may even be tempted to shoot them on opening day for some other hunting opportunity, but that could cause problems. So mark your ***shells*** distinctively.

SHOOTING IN THE REFRIGERATOR

For me, cold weather shooting begins when the temperature dips into the 40s and the humidity rises above that rather arbitrary Fahrenheit factor. While many shooters believe it is cold only when the first frost crunches under their boots or when the wind causes them to wear a balaclava or when icicles are hanging from the clubhouse eaves. A Wisconsin friend, who is a veteran hunter, says the coldest day he ever spent on a treestand was a January day in Alabama!

Nevertheless, as a handloader, you can manage cold weather, rather than just endure it, if you make informed load selections for the conditions and take a couple of small preventive measures. Here are a few steps a shooter can take to keep loads operating as they should or as tested in the laboratory at 70° F, by improving low temperature load performance:



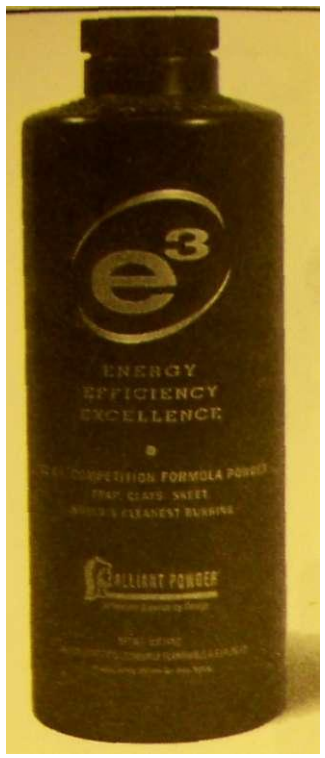
It may be possible to select a different primer than the one specified when the weather turns bitterly cold. And you know that is the time to be outside because all the armchair hunters will be inside by the fire. They will be retelling old stories while you are living new stories. Perhaps this is the time to explore loads requiring magnum primers.

Primers: It may be possible to select an alternate primer to the one specified for the recipe you are loading, one that will increase the ignition quality of a particular load. Search through established load data sources for recipes similar to your favorite, but ones that use hotter primers. CCI and others manufacture primers that burn consistently, regardless of the weather. You might also explore "magnum primers," although this is something of a misnomer, because they are not usually specified for magnum loads, but rather explode with greater heat when compared to the standard 209. You should probably never use these loads if the temperature or the shell rises above 40 degrees F though, or the pressure generated could be too great for the chamber of your shotgun.

Hulls: Hulls become brittle in frigid weather. Think of a garden hose left outside in the winter, and imagine how stiff and cold it feels in your hands. Restrict your reloading to hulls that a reasonable person would consider to be in excellent condition. Sure, this is true for all of your hunting loads, but it becomes especially important in cold weather. Cold exacerbates any already brittle conditions, and using a faulty shell in frigid conditions may cause a gas leak or blow a shabby crimp right off the top of the hull.

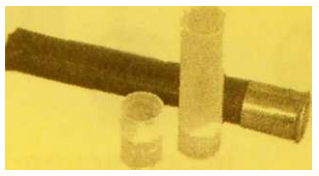
(Photo courtesy The Lost Target)

Think of reloading first as a chance to build performance loads, loads customized for shooting conditions, rather than as a way to sove money ond your time at the reloading bench will almost certainly be more productive and enjoyable.



Alliant says that its new e³ 12-gauge competition formula powder is "far less affected by hot or cold weather than single-base powders/ Apparently, its burn rate and ignition characteristics are "substantially less affected by temperature extremes to give more consistent and reproducible performance all year round*"

From BPI, their "Stretch" and "Stump" A10 wads. Stump is a A 10-bore brush wad while Stretch k a full-length 3-inch shotcup. Both wads can be used in 2-1/2- and 3-inch loads, 5/8- and 1/2-ounce.



Powders: Powder is the key performance variable under any shooting conditions. Various powders have very different ignition qualities and ignition is only one factor in a powders design intent. To accommodate another area of performance, perhaps an extended burn, for example, some powders may explicitly state that they are not cold weather compatible. Each powder has individual characteristics that a load designer considers when concocting combinations. Alliant designed its economical Promo 12-gauge powder, for instance, with the same burn speed as its well-known Red Dot. Promos smaller flakes pack much denser however, and not only does it require a smaller bushing to obtain the same charge weight, but it is a very cold-sensitive powder.

To accommodate the medium burn-rate powders desirable for cold weather, consider using slightly lighter loads. You want to create conditions conducive to a rapidly rising pressure curve. Heavy payloads are the right choice for cold weather, but more importantly, you want a complete powder burn. For cold weather, the author and friends have successfully used powders like IMR SR-7625 and SR-4756, ***Scot*** SoIo-1250 and Alliant's Unique. Very slow burn rate powders like Blue Dot require special loading procedures and are not the best choice for cold weather.

Wads: Like the fuel-air mixture in an internal combustion engine, powder needs the right compression-generated pressure to burn properly. For **a** thorough and clean burn cycle, it needs **a** lot of pressure. If, however, the compression suddenly drops, your burn cycle is going to be interrupted: **a** Jot of crud will be deposited in your barrel and your shot will perform lamely.

To substitute target wads in hunting loads is to cause your performance to suffer greatly, and even more so in the cold. The weak pillar section (usually designed for 1-1/8-ounce or even lighter loads) moves forward too quickly, reducing pressure and interrupting the bum cycle. I have heard several gunners talk about substituting high-density steel shot wads in preparation for a hunt in extremely cold weather. One apparent characteristic of the high density plastic used to cup steel shot is that the tougher, harder product does not become a whole lot less flexible as it gets colder. You will probably notice improved patterns if you shoot these changed loads on paper in cold temperatures, too. You will also reduce the likelihood of cold weather duds - those occasions on which you may have to take off your gloves to verify an unblocked barrel.

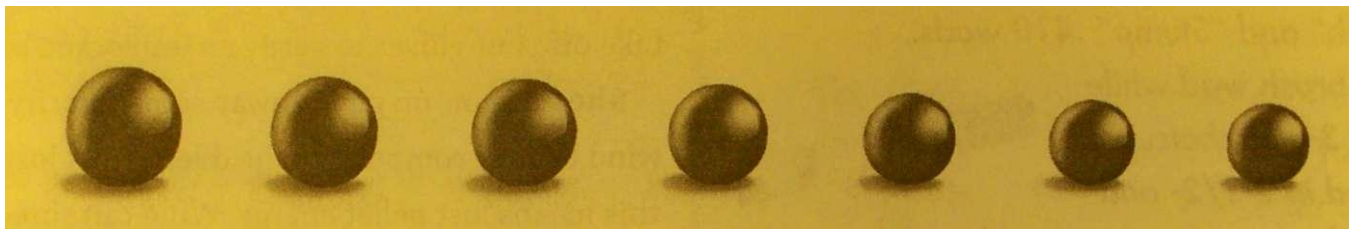
Shot: Count on giving away some velocity to the cold. A wind usually compounds the dilemma of lost velocity, and this means lost pellet energy. Wind can shred your patterns and dramatically affect your pellets, especially after the first 20 yards when the shots velocity and energy begin to decline dramatically. Therefore, compensation begins with pellet size selection. Weight is a pellet's dominant factor for retaining momentum, but you can change this variable and actually increase a load's lethality. A single size larger is usually enough say from #4 to #3.

Steel loads have an advantage over lead in cold weather because of the principle of bulk versus weight. This describes the relationship between the number of pellets in a given load and the pressure created by it versus the traditional weight of the pellets in a load. A large volumes of pellets adds to the quick generation of combustion pressure, assisting the load in getting a better burn out of slower burn rate powders.

Something as simple as keeping your shells warm in the field will also help load performance. One method is to keep them inside your coat and another is to use a plastic, shell box "warming house." Place a heat pack inside and shut the lid. This inexpensive act can keep your ***shells*** in much better firing condition. These same chemical heat packs are also terrific inside gloves or mittens to keep your fingers warm although if you have to juggle them, they will interfere with your ability to get off a shot quickly.

Chapter 8 *Wt*

BUCKSHOT, SLUGS AND SABOT ROUNDS & SPECIALIZED LOADS



Powerful and lethal. Effectively loaded, buckshot is a killer at close to moderate ranges. Left to right: #0000 (0.38-inch, 85 grains), #000 (0.36-inch, 70 grains), #00 (0.34-inch, 54 grains), #0 (0.32-inch, 48 grains), #1 (0.30-inch, 40grains), #2 (0.27-inch, 29 grains) and #3 (0.26-inch, 23.5 grains). Not pictured are #4 (0.24-inch, 20.3 grains), #F (0.22-inch, 16.1 grains) and#T (0.20-inch, 12.8 grains). At 0.17-inches in diameter, #B is occasionally found in buckshot loads.

PLAYING WITH BIG BALLS

Shooting buckshot means playing with big balls, lead balls larger than BB-size, which is .180-inch. Although the most talked about load in fiction may be double-ought-buck, practical buckshot sizes range up to #0000 or .380-inch for a modern shotgun. The intent of hunting with and reloading buckshot is to drive several good size, high-energy balls deep into a relatively close-range target. Excellent for close-range shooting, buckshot has also proven its effectiveness in jungle warfare.

Fine lead birdshot loads are often convertible to buckshot loads? It is true. Many tests indicate that the same weight of buckshot in a load that contains fine lead birdshot produces the same or even slight less test pressure. Actually, buckshot may be used in almost any load if the weight of the load does not change, and the shotcup has room for the larger sized pellets. (Nevertheless, do not under any circumstances presume that you can make a heavier load than is specified in your recipe.)

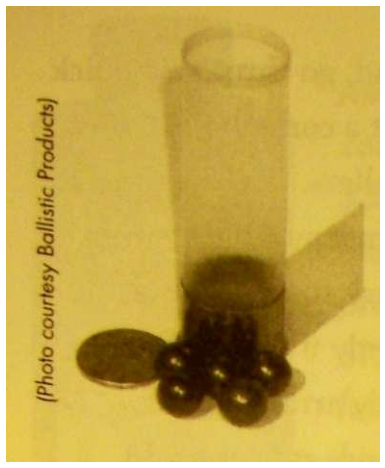
RULES OF THUMB

One of the beauties and difficulties with buckshot loads is that so few actual pellets are involved, although at this size, they may best be considered balls rather than pellets.

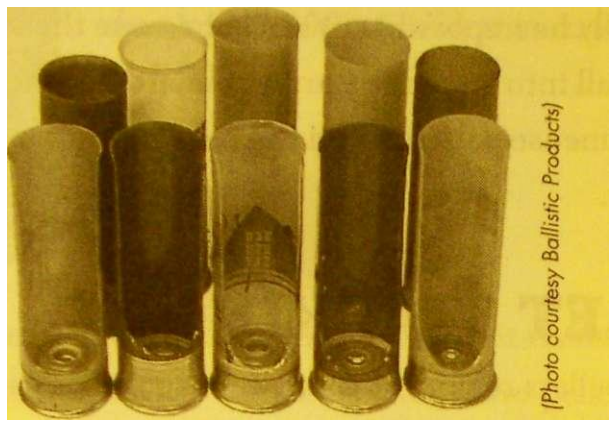
Hard, uniform lead balls produce the highest quality buckshot loads. With buckshot, you operate with a smaller number of pellets than you may be accustomed to loading, so for your pattern's sake, buy the roundest shot you can find. At one time, you could reload copper-plated buckshot, but that item is hard to find these days, although nickel-plated shot is available. Furthermore, to ensure hardness you will want a pellet with the highest antimony content: certainly no less than three percent.

It is important that the buckshot you use is consistent in size, too; otherwise, the loading tables supplied will become invalid. So measure the pellets you use and verify that they correspond to baseline data before using them. If you come up with different weights or measurements, weigh each of your loads, staying as close as possible to the payload guidelines. Because these are hunting loads and you will shoot relatively few - as opposed to trap or skeet loads where you can shoot thousands a year - weighing each load is not an undue burden on your time and effort.

Even though you may lack some particular component or you do not wish to purchase an additional component that you may only use for a couple shots all season, buckshot loads are assembled and tested in a specific configuration and this configuration must not be changed or modified. Even when some slight change may not seem to disrupt the original load design, you must realize that testing every possible change or alternative is neither possible nor practical for a powder or shot manufacturer.



Single-ought buckshot and the shell ready to load with a penny for size comparison. These size shot may bo difficult to arrange in a hull and often benefit from buffering, but consult your recipe.



The color and brass height and style of 12-gauge Fiocchi hulls may vary, but the internals and composition remain the same, says Heather Ewert of Ballistic Products in Corcoran, Minnesota. Some handloaders find that their 209 primers fit loosely in Fiocchi hulls because Fiocchi 616 primers have a slightly larger diameter than most 209-sized primers. A primer pocket conditioner will resize the pocket back to standard 209-size for 10- through 28-gauge shells.

INSIDE YOUR SHELL

Remember that with compression-formed hulls, the hull walls become thicker toward the integral base wad, and the base is generally more bowl-shaped rather than a flat surface. With straight-walled hulls, the base wad is a separate part. The tapered wall of compression-formed hulls creates a unique condition. It is wonderful for lighter loads but difficult for a condition of loading buckshot called "stacking." Stacking is the careful placement of large pellets to best utilize available pellet payload space. Manufacturers of compression-formed hulls such as Winchester do not utilize this particular hull design when making large-size buckshot pellet loads.

Gear Fiocchi hulls, for example, make excellent containers ***for*** buckshot reloads. They are straight-walled with a flat, low, plastic disk base. Even better for reloading is that they are available new and primed. Generally, you will want to stay with the straight-walled hulls for the best fit and finish with large payloads, but whatever hull you select can be made into a fine buckshot load as long as that hull's design is considered.

Some factory wads are suitable for loading buckshot, while others negatively ***affect*** an otherwise performance-balanced load. The handloader needs to remember that the size of buckshot ***selected for*** a particular load has a great influence over component options. Some loads are designed in a way to accommodate smaller buckshot, but as pellets increase in diameter, it becomes increasingly difficult to maintain the weight and bulk of the load design. Buckshot fit - ball diameter and stacking relative to gauge and components - and the size of the buckshot pellets themselves can either make a load or hinder an otherwise fine load combination.

TEFLON WRAPPING

Discovered by DuPont scientists in the late '30s, Teflon is a wonderful plastics product that has applications from slick, non-stick frying pan surfaces that are remarkably easy to clean, to friction-reducing lubricant spray. As a thin film, Teflon is an ideal substance with which to encase lead shot for a ballistic advantage.

Relative to barrel diameter, buckshot is quite a bit more imposing than #7-1/2 bird shot. Soft lead buckshot pellets not only stack poorly in the small cylindrical hull, but once expelled, they have a tendency to want to stick inside a steel barrel and clog inside the necked-down choke, which is not a whole lot greater in diameter than the interior dimensions of ahull.

In application, Teflon wrap is rolled into a cylindrical shape and placed in the hull on top of the gas seal. The thin, slick sheathing allows easier shot charge transition through the barrel and constricting choke area, an area of your shotgun that can disrupt unprotected buckshot loads. Easing choke passage allows larger buckshot pellets to retain their shape for better shot patterns and concentration on target. Teflon wrap allows one to utilize a number of different buckshot pellet sizes in hulls that might otherwise limit pellet size and configuration.

Teflon-wrapped loads require that a gas seal be placed on top of the powder charge, followed by an appropriate number of filler wads to form a column of the needed length. You may use either felt or cork wads of the same gauge as the load. First, however, place the coiled Teflon wrap into the hull on top of a plastic gas seal, and allow it to uncoil inside the hull. Then, place your filler wads inside the Teflon wrapper and tamp them

Teflon wrap is rolled into a cylindrical shape around this slug and inserted into the hull. The slick sheathing allows easier slug passage through the barrel and choke. Use a gas seal on top of the powder plus any code or fiber wads needed to ensure a good, tight crimp.

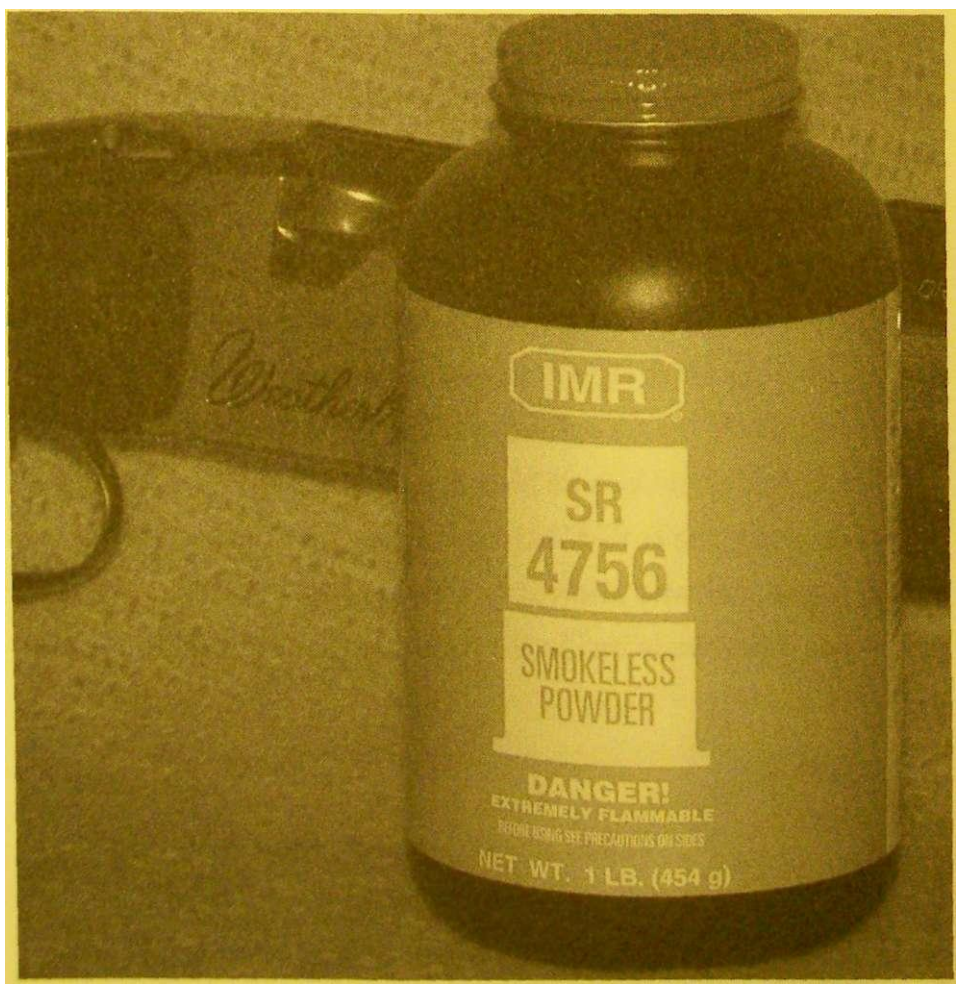
to the bottom. Stack the buckshot according to directions, placing an overshot card wad on top of the shot column, and then crimp. Now, you have a buckshot load.

Buckshot loads are frequently made by using multiple types of components to accommodate specific buckshot sizes. Nitro card wads that are nominally 1/8-inch (0.125-inch) thick are sometimes used as a gas seal. They are more often used as a filler wad, however, creating more consistent firing conditions and the proper payload length for correct crimp closure.

LOAD DYNAMICS

Every buckshot pellet in a pattern carries an enormous amount of energy. Even the smallest buckshot pellets deliver massive downrange energy. Underestimated energy ought to encourage handloaders to explore the size pellet that is truly required for a particular shooting problem without going overboard. Often, a small buck pellet will do the job well, even when a shooter expected to need balls about two sizes larger.

It really is possible to overwhelm a load's hull and wad by using oversized pellets and jamming them into a mix of components. The results of mixing and packing buckshot shell elements tightly together are never pleasing. Logically, for a good result, the package of components must be balanced. Remember that very large buckshot pellets have always been difficult to work into available components. Take extra care when you make load selections for large buckshot pellets.



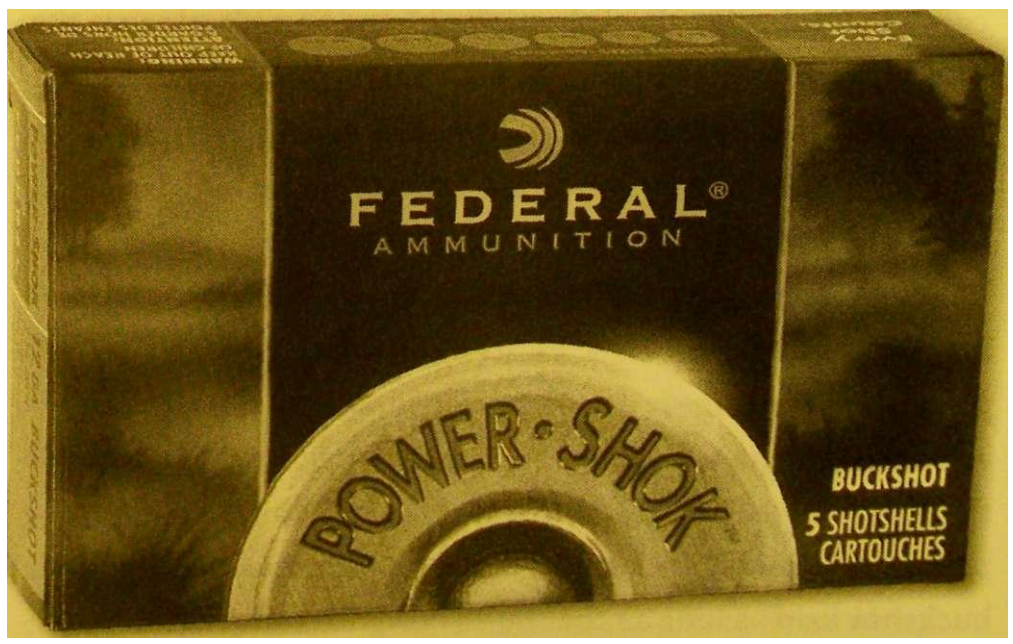
SR 4756 from IMR was designed for optimum performance in magnum shotshells. It is also a good choice for use for large caliber, centerfire handgun ammo.

When considering a large-buckshot load, go through a quick mental checklist. First, you want to select a combination of components that allows stacking large pellets. Use the charts and materials in this book and from other reputable sources, because they will put you on the right track to determine optimum pellet sizes. This is, of course, only if you care about stacking the pellets in some sort of orderly arrangement. Smaller-pellet buckshot loads do not require stacking and may actually be impossible to stack, because the small pellets refuse to fall into an orderly arrangement. To stack them would require immense patience and the results might not be worth that effort.

PELLET STACKING

Larger pellets require stacking into some semblance of order to place them properly in a load without creating height and crimp closure problems. In real-world applications, buckshot stacking can either be an option or a requirement. Available internal space for a particular payload will make the determination for you.

Here is the kicker. Stacking does not always produce better groupings of pellets for long-range shooting, however. As with all types of loading, a large determining factor in downrange patterns is the barrel of your shotgun. With tight chokes, the stack of pellets rams the constriction as a nearly non-adjustable mass, thereby becoming congested and deformed. Clearly, large buckshot will flow more easily through a less-constricted choke. For improved long-range patterns, consider using a Modified rather than a Full choke even though the idea sounds strange. Random setting pellets fired through a tighter choke often produce tighter pellet groupings at a longer distance, but not always!



Federal loads 12-gauge Power-Shok with #000, #00, #1 and #4 buckshot for 2-3/4- and 3-inch chambers and features low recoil loads as well.

Alliant's Blue Dot powder is a frequent component of buckshot loads. Combine 33.0 grains of Blue Dot with a BP 12/2A Multi-hull, a Multi-Hull/ Martingoni 209 primer, 1- 7 / 4 ***ounces of buckshot, a G/BP STS wad (gas seal), a 1/8-inch 20-gauge felt wad and an overshot card and you*** have one ***12-gauge, 2-3/4 shell that develops 8,600 psi with a muzzle velocity of 1,200 fps.***

The principle behind stacking buckshot pellets is that the greater the angle of surface contact between two pellets, the greater the tendency those pellets will impart energy in that direction. In other words, any order given to the buckshot inside the hull is going to reduce the amount of apparent randomness of the buckshots flight.

With smaller buckshot pellets, the quantity of pellets makes up for pattern density and reduces obvious randomness. The compactness and increased surface contact of the greater number of pellets reduces the need for stacking or layering, as influences remain more consistent on all sides.

Stacking pellets in a load may require a wooden dowel to tamp the pellets into place. A slight touch of force is fine because many buckshot loads need firm pressing to seat them properly. A layer-by-layer approach is often recommended, but only so many buckshot pellets of a certain size can be placed in a limited cylindrical volume, regardless of the pressure.

Simply put, if it is possible to arrange one level of like pellets, using as many as possible while fitting within the inside diameter of your hull, it will be possible to arrange additional layers of like pellets on top of this first layer. Stacked pellet layers are usually arranged with the alternating layers set in the valleys between the pellets of the layer below.

TYPES OF BUCKSHOT

The 85-grain pellet quad-buck or #0000 weighs just a few grains short of 1/5-ounce. In the smaller gauges, these .38-inch pellets are difficult to work with, but they ordinarily load just fine in 10- and 12-gauge hulls. Certain loads can be assembled in the sub-gauges though and the quad-buck can be used as a slug in the 410. This buckshot ball is excellent for big game at close range.

Stepping down slightly in size, the .36-inch triple-ought buck or #000 weighs 70-grains per pellet or 1/100 pound. In 10-gauge hulls with an inner Teflon wrap, you can stack triple-ought in layers of three. Twelve of these large pellets create a powerful two-ounce load, and you are loaded for bear, where legal.

The #000 in the 12-gauge lines up very well in layers of two. Since the triple-ought pellet does not require many layers to exceed the weight that can be reasonably shot in your 12, this size has often been overlooked in 12-gauge loads. Again, a slick Teflon-wrap works well as a shot carrier. This is an excellent size for big game such as deer and antelope.

At 1/8-ounce (54 grains) per pellet, #00 or double-ought buck is the most frequently used buckshot size for security and tactical loads. This began when the US Post Office decided to protect the mails and its express mail cars from train robbers in the 1880s. It quickly became the standard for protective loading. Fired from 10-gauge double shotguns at close-quarters, double-ought buck was a true stopper. Double-ought buck in the 12-gauge is still the standard for many government ammunition contracts.

Double-ought is on the large end of what can reasonably be loaded in the 12-gauge using standard shotcups and layers of two pellets. With modern plastic shotcups, three-pellet layers cause the hull to dimple outward. This of course does nothing to help the looks or the fit of the load. Only Teflon wrap allows an improved, near-perfect fit for layers of three #00 buck in a 12-gauge.

The 10-gauge offers a tight layer of four #00 buckshot using Teflon wrap. It is tight in the hull, but the Teflon helps prevent hull pimples. Five layers of four pellets results in a mighty 20-pellet load of heavy shot. Six layers of three #00 pellets will fit into a 10-gauge hunting wad, providing 18 heavy-duty long-range pellets at a total weight of nearly 2-1/4 ounces.

Four layers of four pellets give you a 2-ounce/16-pellet load. The impact is truly powerful. The BPDIO-Tuff stacks nicely and protects the #00 buck for long-range shooting with layers of three. When well-seated, Remington's SP10 wad will contain four layers of three #00 buck pellets for a total of 12 pellets or 1-1/2 ounces. The 12-gauge hull and the Teflon wrap will beautifully support layers of three pellets. Simply cut the Teflon for the right height of layers that you need.

For a special .410 application, a thin shotcup holds two #00 pellets neatly stacked on top of each other.

Many writers believe the single-ought or #0-size buckshot is too often overlooked in loading equations. At .32-inches in diameter and weighing 48-grains, it is a marvel of fit and striking power.

The 10-gauge allows a perfect fit of layers of four #0 buck pellets with a Teflon wrap. If the load is intended for longer

range, stacking pellets is not done. The BPDIO-Tuff hunting wad with #0 buck produces an effective, hard-hitting long-range load.

In the 12-gauge, the #0 buck pellet stacks into layers of three and almost begs for Teflon wraps. Nine pellets, three layers of three, result in an excellent 1-ounce load that is both low on recoil and hits hard on impact. Using Teflon wrap, a handloader can position four layers of three pellets each to build a 1-3/8-ounce load. Heavier loads may be made using Teflon wrap in 12-gauge combinations with smaller based wads.

The 12-gauge plastic shotcup offers a tight, but not unreasonable fit. The tight fit may show up as slightly raised pimples on the outside of the hull.

Another often-overlooked mid-size buckshot pellet is the #1. It is .30-inches in diameter and weighs 40 grains. The #1 is large enough for deep penetration and even a lighter load will create multiple hits as long as you stay within the shell's effective range.

In the 10-gauge hull, a #1 buck pellet size will not permit tight packing. A loose or mixed arrangement is best suited for a different wad and combination of ingredients. The Remington SP10 is a thin-walled wad but it offers a relatively good fit for #1 buck when pellets are stacked in layers of four and the wad will hold 16 pellets in this configuration (about 1-1/2 ounces).

The 12-gauge and the #1 buckshot pellet offer a distinctive fit for large loads in rows of three pellets with a Teflon wrap. This size also offers a good fit when stacked in many 12-gauge plastic wads. These pellets can also be stacked in layers of four and buffered in a hull with no shotcup.

How about the slightly smaller #2 buck with a .27-inch size weighing 29 grains? The 10-gauge offers loose confederations of layers. A double Teflon wrap may work most efficiently in some loads. This size pellet in the Remington SP10 wad will not quite stack itself in concentric rings. However, it is very close and some order is produced, but not layers of pellets. A little better fit is available with the 12-gauge. Using Teflon wrap, the pellets adjust themselves into smooth layers of four pellets. The Teflon wrap can then support six layers of balls.

At .26-inches in diameter and weighing 23.5 grains, a #3 buck pellet is small enough for random placement into any shotcup or wrap in the 10- or 12-gauge. A 20-gauge wad holds three per layer and four layers of #3 (practically 3/4-ounce) make an effective 20-gauge buckshot load. The #3 buck size runs 18.5 to the ounce and is capable of dense patters at maximum range.

The final buckshot sizes are the #4 (.24-inch and 20.5 grains), the #F (.22-inch and 16.1 grains) and the #T (.20-inch and 12.8 grains). From #4 on down there is little need to stack as pellets auto-arrange in 10-, 12- and 16-gauge hunting shells. With the #F, Remington's 28-gauge shotcup will hold layers of three in four stacks for an effective 12-pellet load, but attempting to stack other loads is futile and unnecessary. #T stacks four pellets in five rows for a total of 20 pellets in Remington's 28-gauge shotcup.

When you are shooting buckshot, carefully consider pellet size, because many authorities believe American shooters consistently use buckshot that is too large for the required shooting task. Huge pellets, such as .34-inch and larger (#000 to #0000) are customarily found in field packs, but there is every reason to believe that smaller shot will provide a better load for most days afield.

Handloaders must remind themselves that lead buckshot pellets carry a lot of energy to the target. With multiple hits, the size and power of even the smallest pellet is punishing and single pellet hits of #4 and larger buck generate tremendous stopping power. Nevertheless, it is the ability to put multiple balls on target that makes a shotgun effective for hunting or for self-defense.

SLUGS AND SABOTS

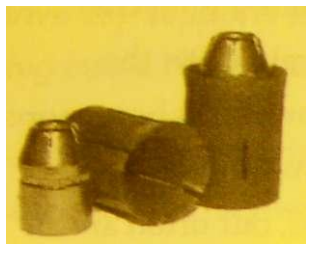
A shotgun slug is an extraordinarily effective, accurate and lethal single-projectile load. With a little effort, your slug loads can be massaged to a point where their effectiveness can rival and occasionally exceed the abilities of some rifle loads, as long as you compare them within the shotgun's reasonable range limitations.

To completely understand slug effectiveness, a shotgunner must first know about certain characteristics of single-projectile ballistics and transferred energy. There are specific differences between shotguns and rifles, of course, and one of them is velocity. A 30-06 rifle pushes a 180-grain bullet somewhere around 2,700 fps. Even though the bullet is relatively light compared to a shotgun slug, it transfers a tremendous amount of energy to its target. Immediately upon impact, the bullet, by design, begins to deform. This deformation or "mushrooming" is akin to slamming on the brakes of your truck. Unless there is a complete pass-through, the target absorbs all of the energy carried by the projectile and this, too, is by design.

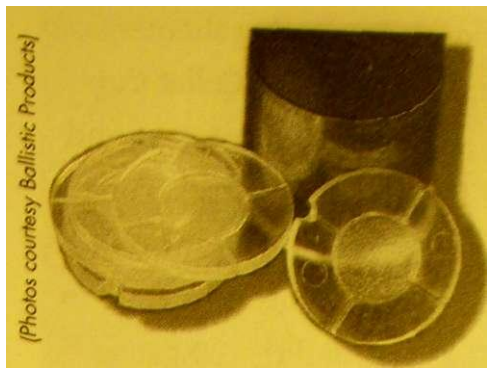
Slugs work the same way, except that weight substitutes for velocity. Instead of 180 grains, we shoot 450 grains, more than twice the weight of the rifle bullet. Instead of 2,700 fps, we shoot 1,400 fps, about half the speed. Yet, in a heads-up comparison at an advantageous range for the shotgun, both weapons deliver similar energies.

A reloader can change the ballistic characteristics of slug

The Dangerous Game Slugs, from left to right in 12-, I6m and 20-gauge and the .4 10-bore perform smoothly in virtually any shotgun/barrel combination, even smoothbores. Column height is self-adjusting for perfect crimps. The Light Game Slug (right) is ideal for the 410 and 28-gauge.



The Collet Cup Sabot Slug is designed for rotation and high velocity in rifled barrels. The 12-gauge slug consists of a 300-grain (11/16-ounce), .45-caliber jacketed, hollow-point bullet wrapped by a molded plastic sabot.



The .080-inch dear overshot card from Ballistic Products is designed so that you know instantly what is inside every rot-crimped shell. BPI says it is also an excellent card for spreader wads. Because it shatters on firing, it will not affect patterns.

loads, and gain a couple hundred feet per second. The downside is that the slug loses that extra energy quickly. Some loads, while performing with extreme accuracy on paper, just do not work well in the field. Always remember that even if some sabot manufacturers talk about tack-driving shots at 300 yards, long-range shooting is not the forte of a shotgun. Use a slug where it works best, in the woods and, of course, wherever it is required bylaw. Keep the range under 100 yards (some argue for half that distance to keep patterns tight with raw slugs) and you will be happy with the results. If you were hoping to use slug reloads for some great 300-yard pronghorn antelope shots, I believe you will be disappointed.

SHOOTING SLUGS

A heavy slug is about as dainty as a charging rhino. There are a lot of options for your own charging rhino today besides the standard Foster-style slug with a round nose and concave base. Of course, improved Fosters for smooth or rifled barrel shotguns are still available for the 12-gauge in .660-inch diameter and 1-ounce sizes.

Very light slugs, on the other hand, can deliver extreme accuracy, and at 100 to 200 yards can rival the accuracy of hunting rifles. However, there is a tradeoff in the ballistic equation that renders flyweight slugs much less effective than even small-caliber rifles. If you were to mix into this equation a slug design completely given over to ballistic streamlining with no thought to target destruction, you would have the hunter's equivalent of blowing pins through a straw. This slug might really drive tacks at 100 yards, but if it blows through a deer without bringing it down quickly, you would have gotten nowhere and failed at making a good shotgun kill. This would be the approximate equivalent of an arrow pass-through for a bowhunter and you would be left with a blood-trailing task. The tiny slug would essentially kill by hemorrhage with a much-reduced hydrostatic shock effect.

Light Game slugs can be purchased for the 28-gauge and .410-bore. The 28 is .505-inch in diameter and weighs 183 grains. The 410 is .375-inch and weighs 93 grains.

A heavier slug, by virtue of its weight, carries additional energy into the target, and killing energy is achieved through a combination of velocity and weight. Any combination of an increase in velocity or weight of a slug will certainly increase its energy payload.

In the 12-gauge, a light slug weighs 7/8 ounce or less. Heavy 12-gauge slugs run 1-1/8 ounces, and sometimes up to 1-1/4 ounces. Most of the effective designs fall somewhere between the two weights.

At normal slug range of 50 to 100 yards, where the slug's momentum is still sufficient to resist the force of gravity, a shooter can take advantage of heavy and not-so-aerodynamic designs.

The diameter of a slug works to the advantage of increased energy transfer. Just as weight and velocity are factors of lethality, the large diameter of a shotgun's bore allows that much more impact area. Your goal is to use as much of that bore diameter as possible, while keeping your slug stable in flight.

Ballistic data points out that a good slug load must have an internal balance for optimum performance. Too much of a good thing in terms of weight reduces launch speed and, therefore, produces a dramatically arced trajectory. The heaviest slugs require slow burn-rate powders, which are unsuitable for consistent loads (and consistent accuracy) in cold weather. Sometimes, additional slug weight is a good example of too much of a good thing. Nevertheless, here are a few of the mightiest slugs now available for sale:

* a G/BP Dangerous Game spire-tipped slug for smooth or rifled barrels: 12-gauge (.735-inch, 1-1/8-ounce), 16-gauge (.670-inch, 1-ounce) and 20-gauge (.625-inch, 7/8-ounce),
• a Thunderbolt at .735-inch diameter and 1-3/8 ounces is advertised as the "ultimate in stopping power for - whatever! This is the slug for you if you are shooting through very heavy brush or encountering dangerous game - where a quick kill is imperative." Load this 12-gauge slug in **3**-inch magnum in smooth or rifled barrels with NO choke constriction.

For lighter game, and as conditions permit, slug shooters can use lighter slugs that weigh under 7/8 ounce. The Collet Cup Sabot Slug, for rifled barrels only, is designed for rotation and high velocity in rifled barrels. The 12-gauge slug consists of a 300-grain (11/16-ounce) .450-caliber jacketed, hollow-point bullet wrapped by a molded plastic sabot. It is also available in a 325-grain, .500-inch sabot for 12 gauges and the 20-gauge measures .450-inch at 250 grains.

Do not forget that even a light 12-gauge or a 20-gauge load carries a terrific amount of energy. One of the benefits of lighter slugs is reduced recoil. (The former edition of this volume said "for shooters who are *sensitive"* to recoil. During the past decade, we have realized that all shooters are sensitive to recoil, however, but that individuals simply react to it differently.) Lighter slugs allow handloaders to use fast burn-rate powder for better combustion in cold weather. In warmer conditions, you can opt to increase muzzle velocity with slightly slower burn-rated powders. In taking advantage of high velocities, the handloader is rewarded with a flatter trajectory to the target as well as an associated increase in delivered energy.

SLUG WEIGHT AND SHAPE FOR OPTIMUM SHOOTING

Shotgun gauge is determined by how many round balls can be cast from one pound of pure lead in that particular diameter. Thus, one pound of lead cast into 12 round balls produces the diameter of the 12-gauge, .729 inches around and weighing 583.33 grains. That is a bit over 1-1/4-ounces.

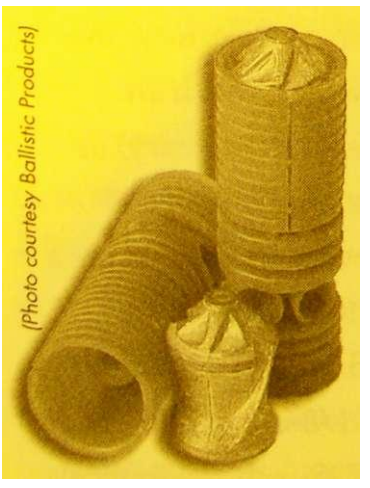
In any given gauge, a round lead ball that fits the bore is about the prime computed overall weight for optimum speed and accuracy for that particular barrel. Interestingly, using this formula produces a slug that is least susceptible to tumbling and takes full advantage of the barrel's diameter, offering the broadest possible face to the target. Round balls are not a ballistic panacea either, but certainly are a reasonable and effective solution to many slug-shooting needs. However, you should never fire a bore-sized ball from a choked barrel, because the ball will collide with the barrel and both may very well be deformed as a result.

It is important to keep an eye on the volume a projectile occupies inside the barrel and not wholly fixate upon the projectile's weight. Shotgun gauge/barrel optimums have more to do with volumetric displacement than you would expect. Since slugs are not usually made of pure lead, but often are an alloy of metals, the volume displacement is greater than an equal weight chunk of pure lead. Therefore, the optimum slug will be both slightly larger and lighter than an optimum-sized slug of pure lead.

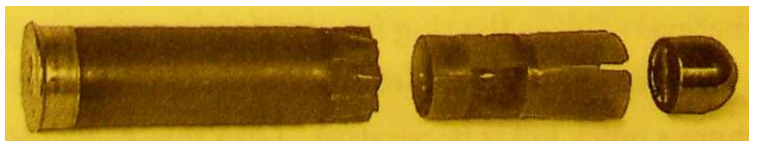
Carrying forward this formula of volumetric measurement (with standard slug composition) we find that:

- The 10-gauge slug optimum is less than 1-5/8 ounces and close to 1-1/2 ounces.
- The 12-gauge slug optimum appears to be somewhere between 1 and 1-1/8 ounce.
- The 16-gauge slug optimum is just shy of 1 ounce.
- The 20-gauge slug optimum is between 3/4-ounce and 7/8-ounce.
- The 28-gauge slug optimum is about 1/2-ounce.

Except in the South where many hunters shoot over wide-open food plots, east of the Mississippi River, most favorite hunting areas are filled with dense cover, usually tightly woven brush and stunted trees. In order to hit your target, you may have to fire through branches, twigs and leaves. No matter what you have heard or perhaps read, there is no such thing as a "brush buster" slug or bullet. So let us not propagate this myth. If a projectile of any type ever hits its intended target after traveling through leaves or grass or anything other than air, that indeed is an accident. The only thing we can say for sure is that tougher projectiles (which are less apt to deform in such encounters) will be less deflected.



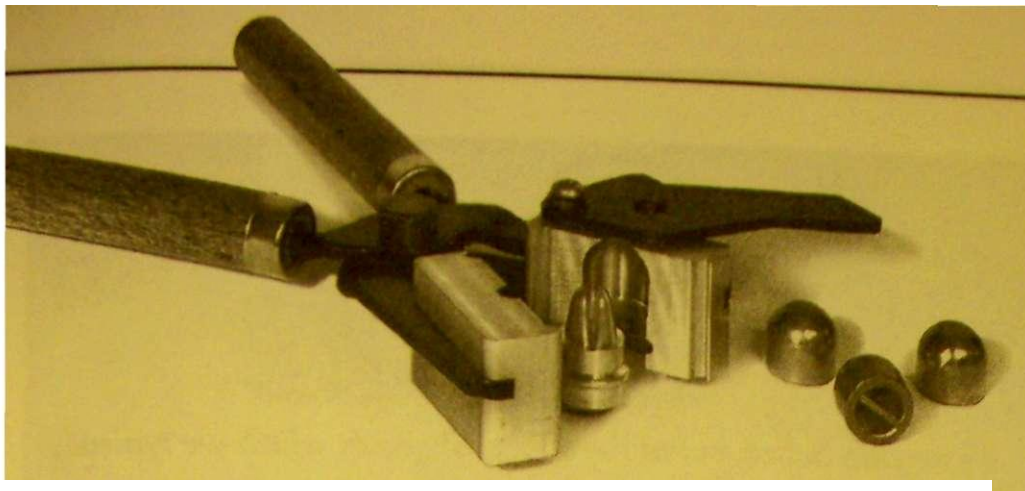
The exterior of the LBC's BluForce Sabot hull is etched with distinctive bore-seal rings for a more efficient seal. Above the gas seal are tubed energy-damping crush-sections to absorb setback, for a more stabilized projectile. This should result in higher velocities and greater shot consistency. The .650-inch diameter slug, like all Dangerous Game Slugs, is engineered for stability and impact.



Neat and compact. Handloading slugs and sabots is no more complicated than loading pellets.

RIFLED BORES, SMOOTH BORES

If your shotgun barrel is rifled, you need to take advantage of it by using one of the slugs designed to work harmoniously with it. This type of slug, by design, is more accurate at extended range. These slugs have rifling pickup rings molded directly into the body, and are supposed to grab the barrel's rifling twist. A little experimentation will lead you to the one that works best with your gun. You should shoot it at various ranges until its performance becomes predictable.



A Lee Shotgun Slug Mold will help you save money and increase your satisfaction in doing-it-yourself. An exclusive drive key supports the base of the slug, positively rotating the ug inside rifled shotgun barrets for better accuracy.

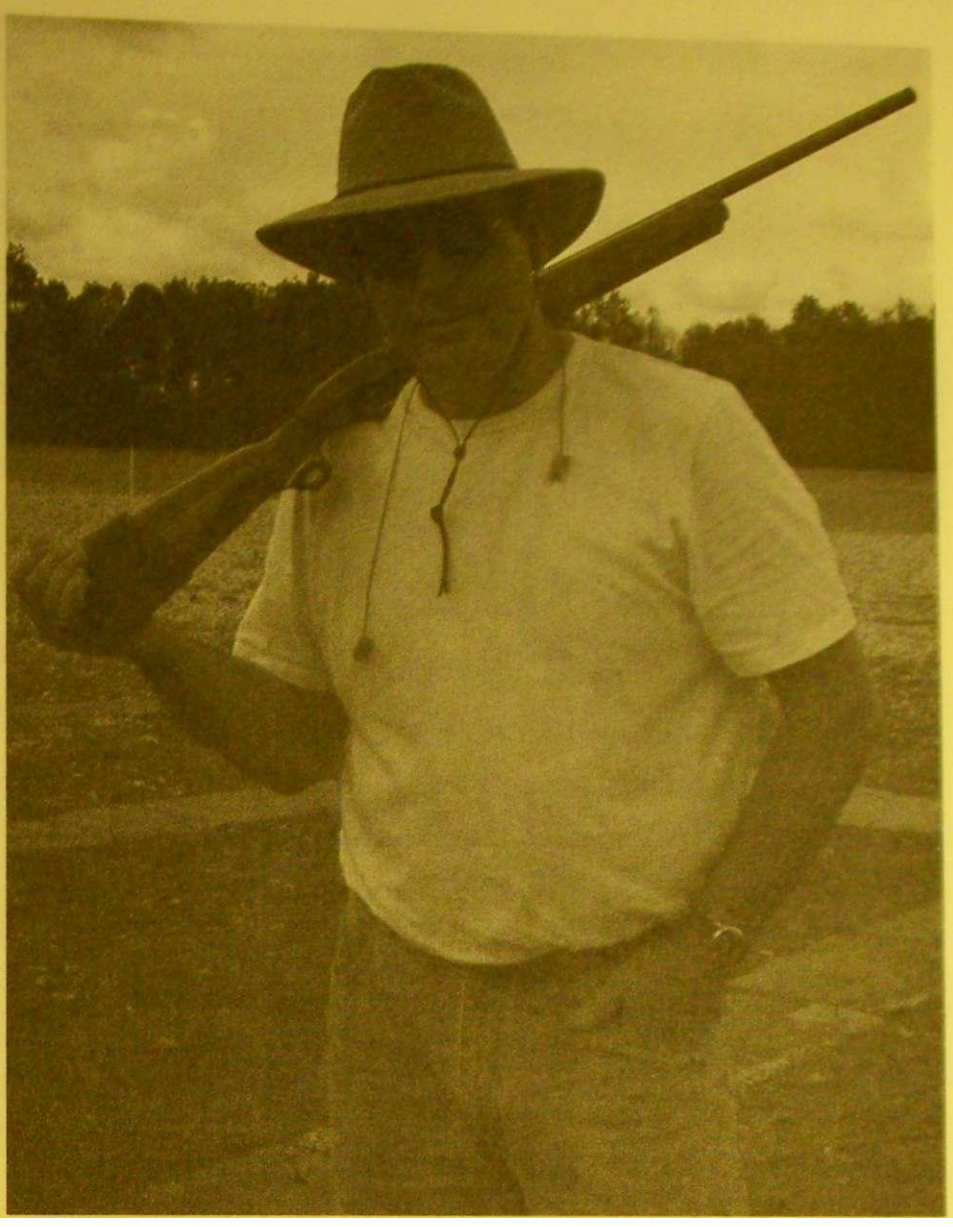
Smoothbore purists can, and sometimes do, attain high levels of accuracy with specialized slugs. To maintain their accuracy, these slugs must have proper fit within the barrel. Most often, inaccuracies associated with smoothbores can be directly attributed to slug deflection during its course of travel down the barrel. Deflection can sometimes be cured with a Teflon wrap around the slug. This creates the snug fit between the slug and bore needed for accuracy, and also allows the slug to slip down the barrel in milliseconds without causing or encountering extreme friction.

Although smooth barrels will not impart any negative influence upon shotgun slugs, neither will they impart any positive influence. Other factors become critical to high performance loads such as relative bore diameters (individual barrel differences), the general quality of the shotgun bore for slug use, tightness of the barrels choke (if any) and the quality of the gas seal in the loads. These factors add up to the overall efficiency, the accuracy and velocity, of an individual shotgun.

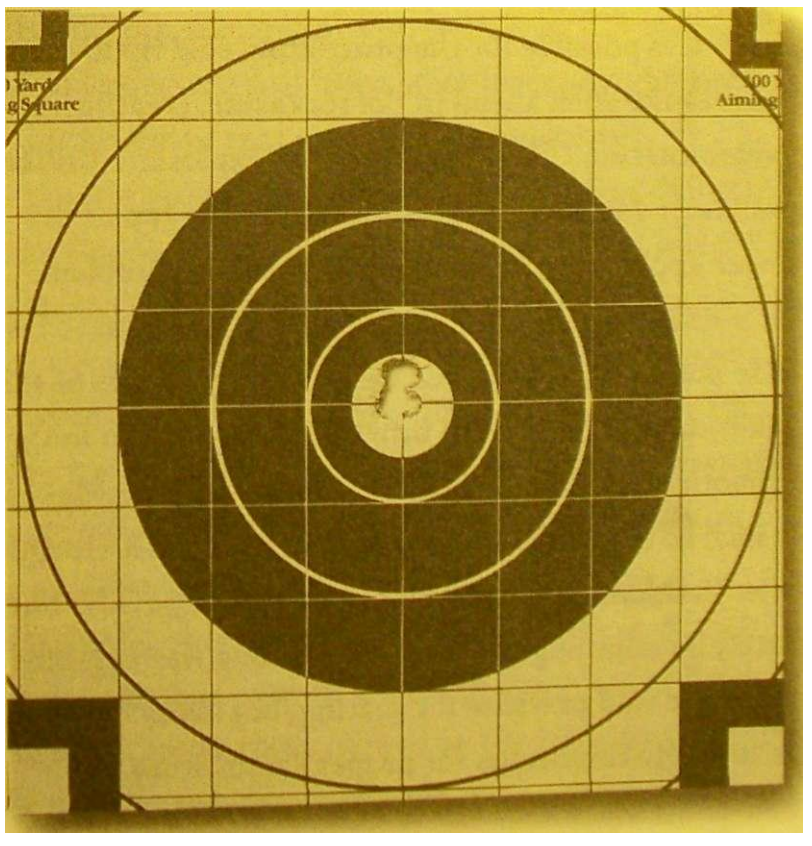
SLUG LOADS AND THEIR COMPONENTS J

The conventional 12-gauge hull is 2-3/**4** inches long when it is fully open and extended. Hulls loaded with slugs are usually roll-crimped down to the top of the outer shoulder of the slug, leaving the correct overall folded length. If the hull is new and unfired, roll-crimping produces an effective closure. For accuracy and pressure consistency, slug handloaders should strongly consider using only new hulls for their roll-crimped loads, certainly not recycled hulls that have previously had six- or eight-fold crimps.

With the modern slug's superior design and balanced weight, the handloader can produce high-speed, personalized loads for a longer **3**-inch chamber. If your shotgun is so chambered, you may wish to use the additional shell length to build performance as long as any change will conform to the shotgun's design and pressure intent. The longer hull allows a bit more space for powder and other components, including additional gas seals, which can help you obtain superior consistency and velocity.



The author, pictured at the Gator Trap & Skeet Club in Gainesville, Florida shoots recreational shotgun games with the same 20-gauge he uses to hunt deer. "Keep your gun clean and be selective with your loads," is his advice.



With the proper set-up, including a scope, you can realistically shoot heavy slugs accurately to *100 yards. Beyond that, slugs lose speed and quickly arc to the ground. Lightweight slugs might pattern well on paper at twice that distance, but they will not retain the energy required for killing penetration on big game.*

You may shorten hulls below the usual 2-3/4-inch length for specialty slug loads and increased magazine capacity. Before you make a bunch of these, however, make sure your shotgun will cycle them properly. Stubby hulls are a fine way to save previously fired hulls for one more firing. Be sure to follow all shortened hull directions, and check the brass heads and base wads for integrity.

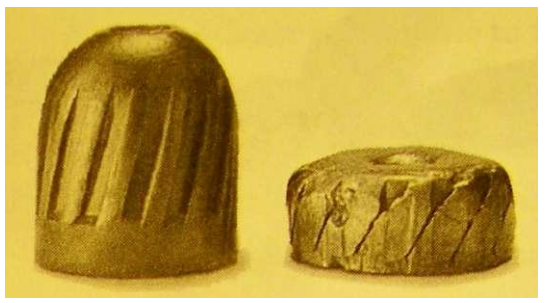
WARNING; *The newcomer to handloading should note that experimentation in hull length and load concoction is* ***NOT*** *advised. Often, the chamber pressures of these loads increase in proportion to a decrease in hull length.*

For best results, shooters need to take some time to consider important ballistic variables associated with shooting slugs. Two factors affecting what you want to put into a round are the expected temperatures at the time of the hunt (affecting the powder burn and velocity) and the landscape of the hunting area Gong or short range).

The physical conditions of your hunt should influence slug selection. To take advantage of all loading options, many of which are unavailable in even the best factory-loaded ammunition, which is produced for "average weather conditions," you should examine your shooting and the game you hunt to determine which load is best.

Some slugs have a tapered or spired front end. This is good - and bad, because you never want a sharp point to stick out beyond the hull's top edge. It is a situation to avoid, especially if you are using a gas gun or a pump, both with tubular magazines. It is possible for the protruding slug tip to contact the primer in the shell ahead in the magazine, creating "a dangerous situation." This could cause an explosion. Unlikely, but possible. If you add an overshot card to the top of the load before applying a crimp, you can avoid this problem.

What powders are best for slug shooting? Medium to fast burn-rate powders have worked well with most types of slugs and conditions, and many fall into that category. For long-range shooting in cold weather, try a single-base powder (no nitro!) such as the Scot/Accurate Solo 1250 or IMR/Hodgdon numbers. In colder climates, you can help your powder burn completely by crimping the shell deeply. Slug wad columns do not require wad pressure for seating, but always need firm crimps to create conditions for proper combustion.



It's no rifle bullet, but at the short ranges at which we typically shoot deer in the East, a slug packs a terrific wallop. Out to WO yards, the slug is arguably more lethal than many rifle calibers.

For an accurate slug load, a plastic gas seal should be used, sometimes more than one. Plastic gas seals allow the load to generate maximum energy from the powder burn and place the pressure directly behind the slug, keeping disruptions to a minimum.

GALLING AND OTHER \;'ₙ BARREL CONTAMINATION

Sometimes when shooting slugs, especially one after another as you are zeroing your scope at the range, you can look down the barrel and see a large amount of crud. It may look like there is more of the projectile stuck to the barrel wall than actually exiting the muzzle. What is it and how did it get there? What you are seeing is a combination of plastic, powder and lead fouling left behind by the slug, especially if it is one of the tight-fitting, high-performance design. More stuff in the load means the chance of crud building up in the barrel is more likely. There is also a very shotgun-specific reason for this fouling.

In the spectrum of operating pressures, shotguns operate at the lowest point possible for a complete combustion cycle. At this low pressure, burning cycles are easily interrupted and often incomplete. For this reason, shotgun loads often leave some ash and residue in barrels. This does not necessarily mean that anything is "wrong" with the load or your shotgun. (By contrast, high-powered rifles can run three and sometimes four times the pressure.) Add to the shooting equation a big, heavy, tight-fitting slug scraping its way down the barrel, and you are almost always going to find some stuff there. Also different from metallic cartridges, shotshells contain soft, sometimes biodegradable, wadding materials, either of plastic or paper. Both types leave residue on barrel walls. In summary,

The Benefit 12-gauge M2 field slug autoloader is available in Timber High Definition Camo or with a non-reflecting black stock. The 24-inch barrel has a rifled bore (l:28~inch twist) to accommodate precision slug/sabot shooting. Benelli designed its "ComforTech" stock system to reduce felt recoil "as much as 48 percent over the competition/'

a shotgun is fundamentally a quite different animal than a centerfire rifle.

The real problem in cleaning the bore is getting rid of lead. Layers of it hold all of the other goodies in place with stubborn tenacity. I have found that the best way to remove the lead is with a combination of chemicals and patience. Keep your bore clean and take advantage of the extra accuracy offered by a clean bore.

SPECIALIZED LOADS

Every once in a while, shooters who own fine English shotguns want to take them out of the display case and give the little jewels some exercise. Load accommodations have to be made, but you can easily create some excellent specialized loads using widely available components.

Factory-length 2-inch hulls are often hard to come by in the US. If you can find them, they are pricey, and load data to accommodate specific shooting needs is sparse. Standard 2-3/4-inch, 12-gauge hulls are sometimes cut short to fit English standard shotguns of 2- or 2-1/2-inch chamber lengths. Another application for 2-inch hulls is packing a greater number of loads in the tube magazines of riot guns.

Be aware that shortened hulls typically cause higher chamber pressures. It is logical that reduced operating space (volume) inside the hull causes increase pressures. Pressure rises about 20 percent in a 2-inch hull from parallel loads in the 2-3/4-inch hull. This is similar to the pressure increase when changing from 3-inch hulls to 2-3/4 inches.

Out of convenience for the reloader, short hull loads should be roll-crimped. This stabilizes the pressure rise. Roll-crimping also benefits the reloader by using the maximum amount of volume in the shorter tube. Since volume is limited and the pressure easily runs up, a smaller amount of shot is also a reasonable solution. Most of the shorter loads are around 7/8-ounce. This may seem light, but you have to recall the guns these loads are used in. They usually are built on lightweight frames, have thin barrels and weigh 6 pounds or less. Although this may seem awfully light, the intention was to combine the advantages of the 12-gauge with those of the traditional smaller-bore shotguns.

MISCELLANEOUS NOTES

For the most part, cutting a hull is not an exact science. Measuring from the base, mark the hull at exactly 2 inches, 2-1/4 inches or whatever you have decided is the right length. Remember, length is determined by the *empty* hull to the end of the spread out or straightened crimped folds. For cutting, a leveraged, stainless steel snip works very well.

Another method is to place a wooden dowel inside the hull for support and cut the tube with a razor blade or an X-acto knife. Be careful and take your time.

Most conventional target wads will be too tall for use in shorter hulls. Since most of the original shorty loads used cardboard gas seals, there is no reason not to fall in line and use this traditional material. You can use a .125-inch (1/8-inch) nitro card wad as the seal, then stack just the right number of card wads on top of that to take up extra space.

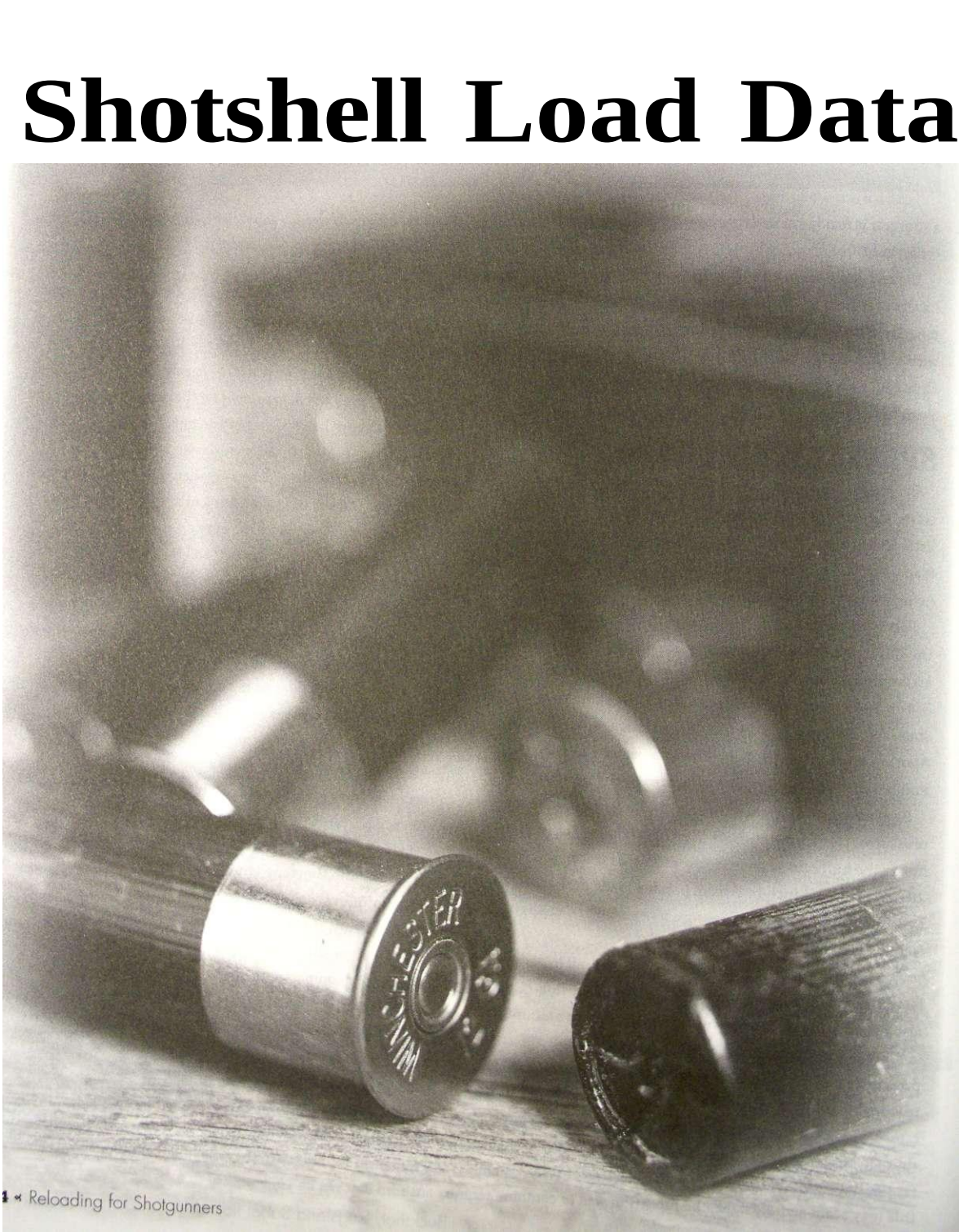
You can use plastic gas seals, too. The BPGS or Ballistic Products Gas Seal offers a complete, finely edged seal for high performance loads. Loads using a plastic gas seal require less powder, because you do not have to accommodate leakage.

On top of the gas seal, place a cork filler wad to create a solid platform for the pellets. An overshot card then secures the shot charge, and the shortened hull is roll-crimped by means of a special spinning tool.

Traditionally, short loads use fine shot such as #6 and smaller. Larger shot uses up too much space, negating the advantage of compactness offered by these loads. Short *loads* use fast burning powders; these are not magnum loads and do not need to be driven with excessive velocity. Shorty loads are "poppers," made for a stroll in the countryside, leaving the hunter unburdened by an overly heavy shotgun. Enjoy the walk with the dog and take the occasional pheasant. Use of these loads reminds you to slow down and make game acquisition secondary to the enjoyment of companions and an autumn day.

Section II

Shotshell Load Data



Chapter 9

INTRODUCTION TO LOAD DATA

Almost every load you could be interested in ramming down your barrel is available in the Load Data section of this edition, of course, builds on the shoulders of previous bright and capable reloaders and editors. Thus, thousands of load recipes are included for every bore size, shell length and projectile type - lead and non-toxic pellets, and lead slugs.

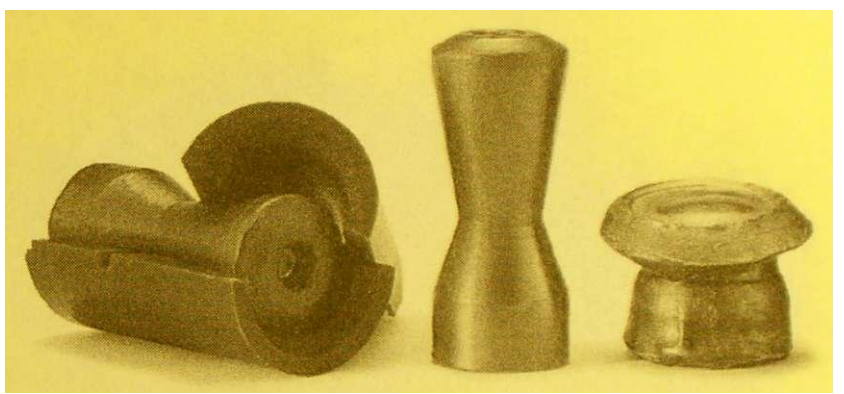
Regarding the icing on the shell cake, former editor M. L. McPherson noted that crimping data was the one thing he could not statistically detail in a chart. He said, however, "If the crimp on your handload does not look similar to the crimp on the factory load, you should adjust your press until it does."

As a general precaution before discussing the data presentation or load recipes or load formulas, I would like to say that loads are precisely calculated. If you do not understand the instructions for the components or the loader or if you cannot follow the recipe, do not undertake to reload shells. If you are not attentive to detail, you will make mistakes that result in sub-par performance and perhaps even a dangerous situation.

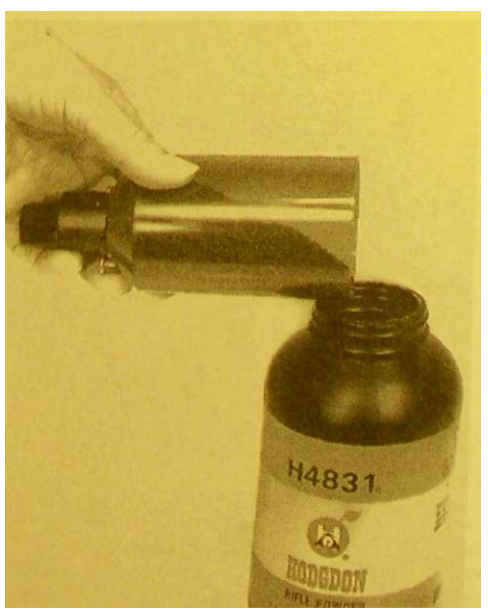
The motivation one brings to handloading will usually determine one's results. If you are looking to save money, you will most certainly search for the least expensive components for your reloads; the cheapest hulls, powder, primers, wads and shot. For that reason, the combination of your components will perhaps change from loading session to loading session. Unfortunately, at least in my mind, I correlate the budget-mindedness of some reloaders/re-users/recyclers to those who are less meticulous, who are interested in quantity first and quality second. As I have opined elsewhere in this book, saving money is a poor reason to handload shotshells, if it is your only reason.

If your motivation is to customize your shooting, to maximize your gun's performance with goose loads or trap loads, then I believe you will naturally take a more meticulous approach ***to the*** reloading bench and keep better records of what you have done. This type of attitude takes people to the pattern board often, to the study of additional reloading manuals, and to experiment with load recipes. If you save money with this philosophy, that is ***certainly*** a bonus.

Ten years ago, when the former edition of this book was being prepared, there were relatively few non-toxic recipes available for handloaders, and they were primarily steel shot. Consequently, there were individuals who had identified specific needs that were not effectively being addressed by commercial factory loads. That is no longer the case. With the development of bismuth and tungsten-matrix, and the continuing refinement of steel loads, every possible shooting situation can be effectively addressed either commercially or by reloading.

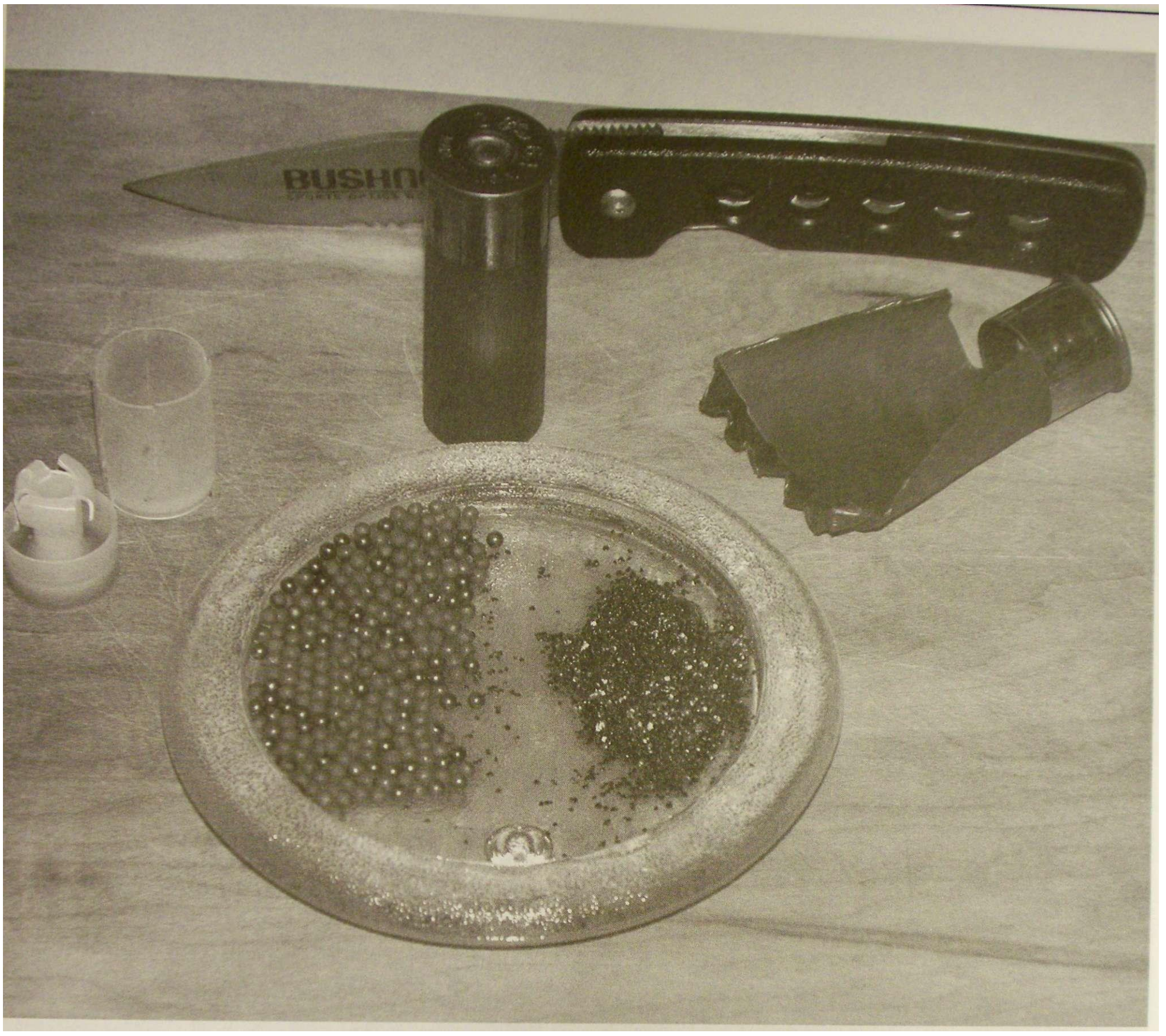


The first time you reload a sabot round, it can be tricky, because roll crimps are often recommended and the crimping process itself is going to take some time. It is like riding a bicycle, however. After you do it successfully a couple times, you should never have a problem again, but handloading - especially the "by-hand" hunting loads - always requires your complete attention.



When you begin looking for the reloading press that b right for your interests and budget, look for the small extras that will make your life as a handloader easier. One of these is finding out in advance just how easy it is to return powder and shot to their original containers once your reloading is done for the day. It is not clean and easy on every machine available to you today and the last thing you want to do is clean up and dispose of shot and powder on the floor and bench when you are tired or duty calls elsewhere.

Pulll Skeet station one means a couple of easy and relatively close shots. Once you "get the hang of it," you can reload a case of 1 1/8-ounce 12-gauge loads of #9 shot every hour, or 7/8-ounce 20-gauge, 3/8-ounce 28-gauge, or - if you are in a confident frame of mind - V2-ounce for your .410-bore.



Reloading will introduce you to the intricacies of a new science. Dealing with the components that make up a shotgun shell teaches you about burn rates and drams equivalent and skived hulls. There is a lot to learn and studies indicate that as we get a wee bit okder, H takes us longer (it is harder) to wrap our minds around and master new skills and information. So, why wait?

In this edition of ***Reloading for Shotgunners, we*** use a specific format that we cheerfully admit is adopted from the earlier edition. We too assume that you are interested in presentation by shot type (lead, non-toxic, etc.), and then by gauge and chamber size. You have a specific gun that you load for, and this should make it easy. For instance, if you have a fine Weatherby Super Sporting Clays Orion over/under, you will discover that all of the 12-gauge, 2-3/4-inch, 7/8-ounce data (or 1-ounce or 1-1/8-ounce data) is grouped together. It will be easy for you to compare loads and performance expectations and find good options.

If, on the other hand, you are partial to a special component (Winchester AA shells, for example) or you have a huge amount of a particular powder such as Unique or Red Dot on hand, you will have to skim down the tables for load particulars. The same is true if you want to shoot a specific size pellet at a certain speed. Just skim the tables for data that meets your needs.

Because the data that follows is dense and is in tabular format, it may unfortunately be easy to misread a recipe. Please make it a habit to verify your loads: weigh the powder drop on an independent scale to make sure your machine setting or bushing is correct. In fact, because it is possible that we have made a typographical error in the thousands of data entries that follow, entries wherein one number or letter can lead to misinformation, I urge that if your chosen recipe seems at all at variance from what you would reasonably expect, find a second

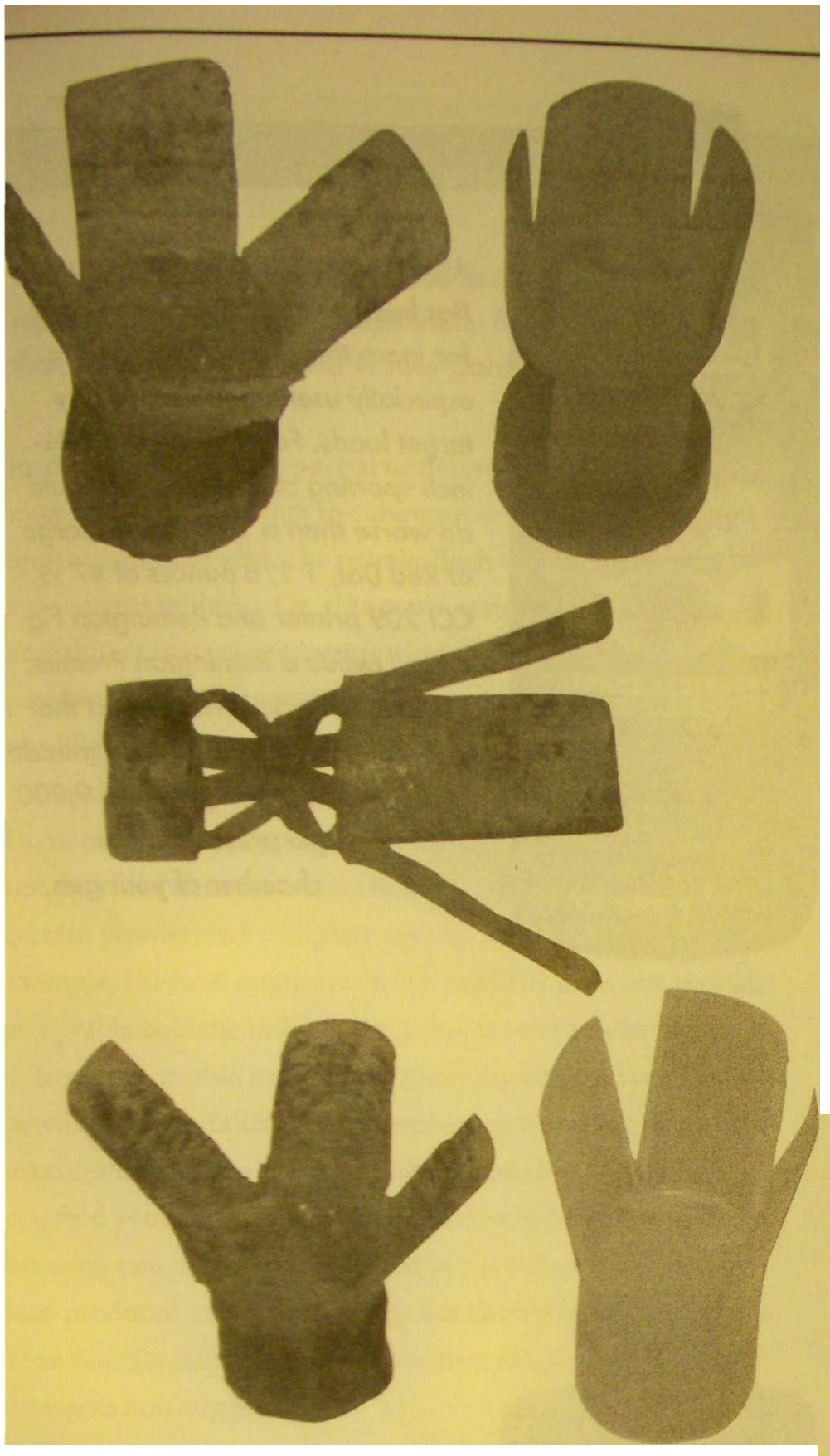
Michigan's Tim Hooey, who has taken more turkeys with his bow than with his shotgun, says that bringing down a bearded gobbler usually is best accomplished with a heavy load and a tight choke. Tim says he has experimented with #4, #5 and #6 shot, and has found that they all work well on a bird that you have called in closel

source to double-check the ingredients and volumes. Every reasonable effort has been made to ensure that you get perfect information, but even in the finest, most professionally-proofed columns, small errors can and do creep in.

SOME SAFETY CONSIDERATIONS

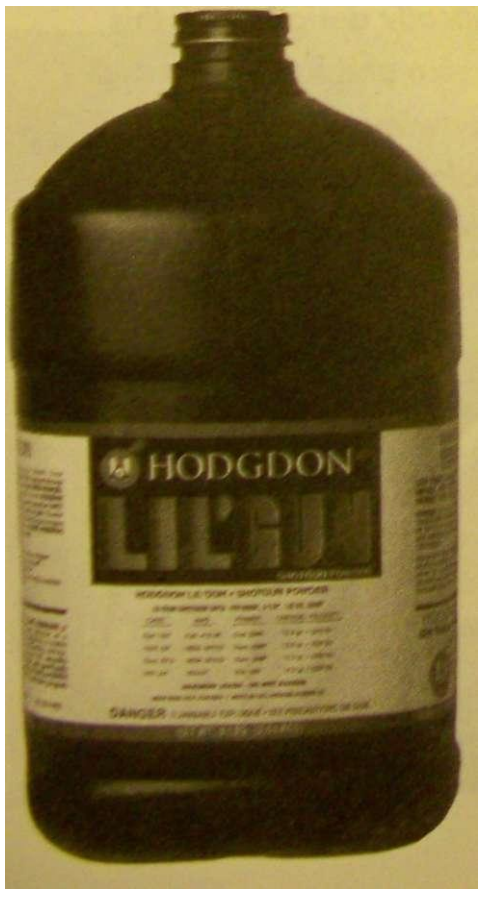
You cannot assume that it is safe to reduce the powder charge shown below that given for the minimum velocity loading with a particular combination of components. For example, in many instances, the data for that combination shows only powder charges for higher velocity loads. Sometimes, these charges are in incremental steps. One could reasonably interpolate a lower powder charge that will give some specific, lower velocity.

However, it is not safe to expect that a lower charge and resultant lower velocity will always generate lower pressure and be safe. The reduced charge might not adequately fill the hull to produce proper and consistent ignition or to ensure a proper crimp. The potential for a squib shell is high. A reduced

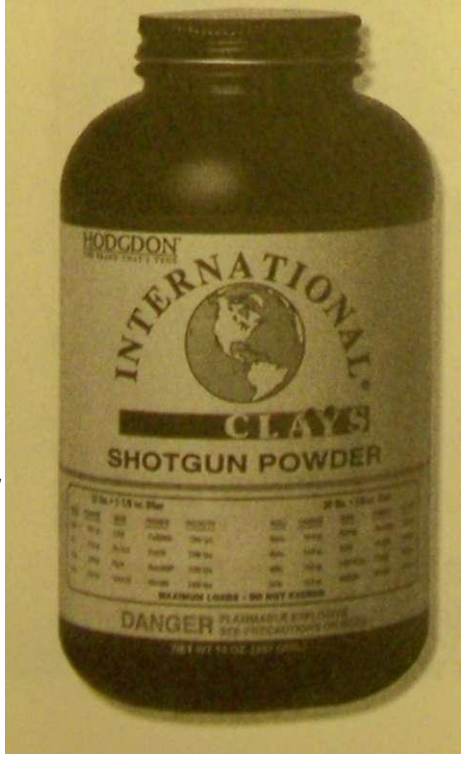


Compare a few spent wads to new wads and you will quickly realize two things: A. why they are not reusable and B. the power of *the setback inside the hull. Shot leaves permanent indentations in the base and sides {petals) of the plastic wads.*

HS-6 from Hodgdon Powder is a fine spherical propellant for 28-gauge target loads **or** ***all-gauge light field*** **use. for** ***heavy duty hauling in the held, it has specific applications also for the 10-, 12- and 16-gauge. HS-6 is also pistol-rated for light to medium duty applications.***



Hodgdon says the 410 has "long been difficult to load due to shortcomings in powder fit, metering, along with poor burning characteristics." Their Ul' Gun ha 410-specific powder for any purpose, clay shooting or hunting. Ul' Gun is also pistol-rated for medium to magnum duty applications and rme-rated for light duty (works well in .22 Hornet loads).



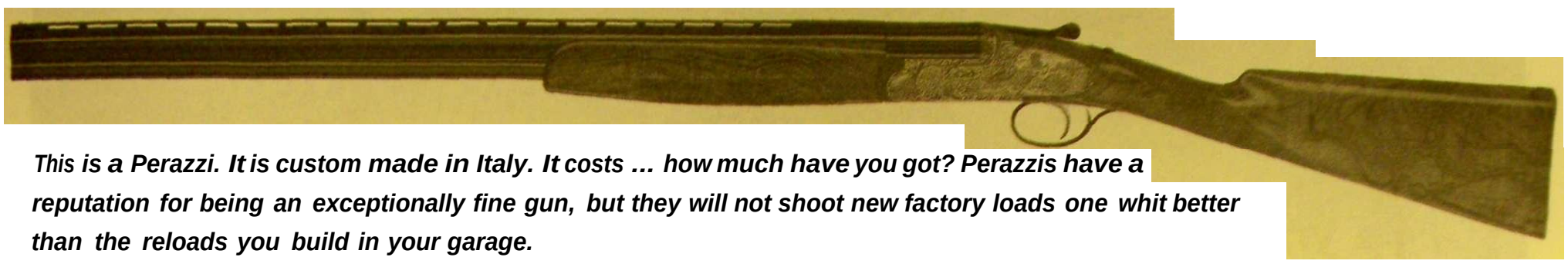
Hodgdon Powder's International Cays is gauge specific in target and light field loads for either the 12- or 20-gauge. "It is positioned in burning speed to accommodate 12-gauge, 2 **inch** ***light, medium and heavy 7 1/8-ounce loads, with some very nice 1-ounce listings.***

Alliant says that its fast burning Red Dot has been a popular propellant for more than 70 years and is an especially useful powder for clay target loads. For a 12-gauge 2 ¾-inch sporting clays load, you could do worse than a 19.5 grain charge of Red Dot, 1 1/8 ounces of #7 V2, CCI 209 primer and Remington Fig. 8 wad inside a Remington Premier, STS plastic target shell. Expect that you will achieve a 1,200 fps muzzle velocity and generate 9,900 psi pressure in the chamber of your gun.

Named for the "porous base" structure of its grains by which the burn rate is controlled, IMR's PB is a clean-burning single-base powder. It yields very low pressures in 12- and 20-gauge target loads and performs well in a wide variety of handgun loads.

With a 0.410-inch internal barrel diameter, the .410-bore requires special shotgun loads. Allianfs 410 is a flake powder specifically designed for this bore size and falls in the 410 family with other carefully formulated and measured powders such as Winchester 296 and IMR 4227.

Originally intended for small cartridges such as the Hornet and Bee, IMR 4227 has proved useful in a wide spread of high performance handgun loads as well as the 410.



This is a Perazzi. It is custom made in Italy. It costs ... how much have you got? Perazzis have a reputation for being an exceptionally fine gun, but they will not shoot new factory loads one whit better than the reloads you build in your garage.

load might also create partial or delayed ignition or the primer might partially dislodge the shotcup or the powder might ignite sometime after the primer flash - causing a minor, subsequent ignition. Or, this could result in the subsequent and almost instantaneous ignition of the entire, superheated powder charge. The results will resemble an explosion. You will not like it.

Use the precise components specified for the load you want. Do not try to develop your own data. If the manufacturer has not provided data for a certain higher or lower velocity with a certain powder, the company usually has a good reason - for example, the load might not work safely or does not provide acceptable ballistic uniformity, pressure or pattern density.

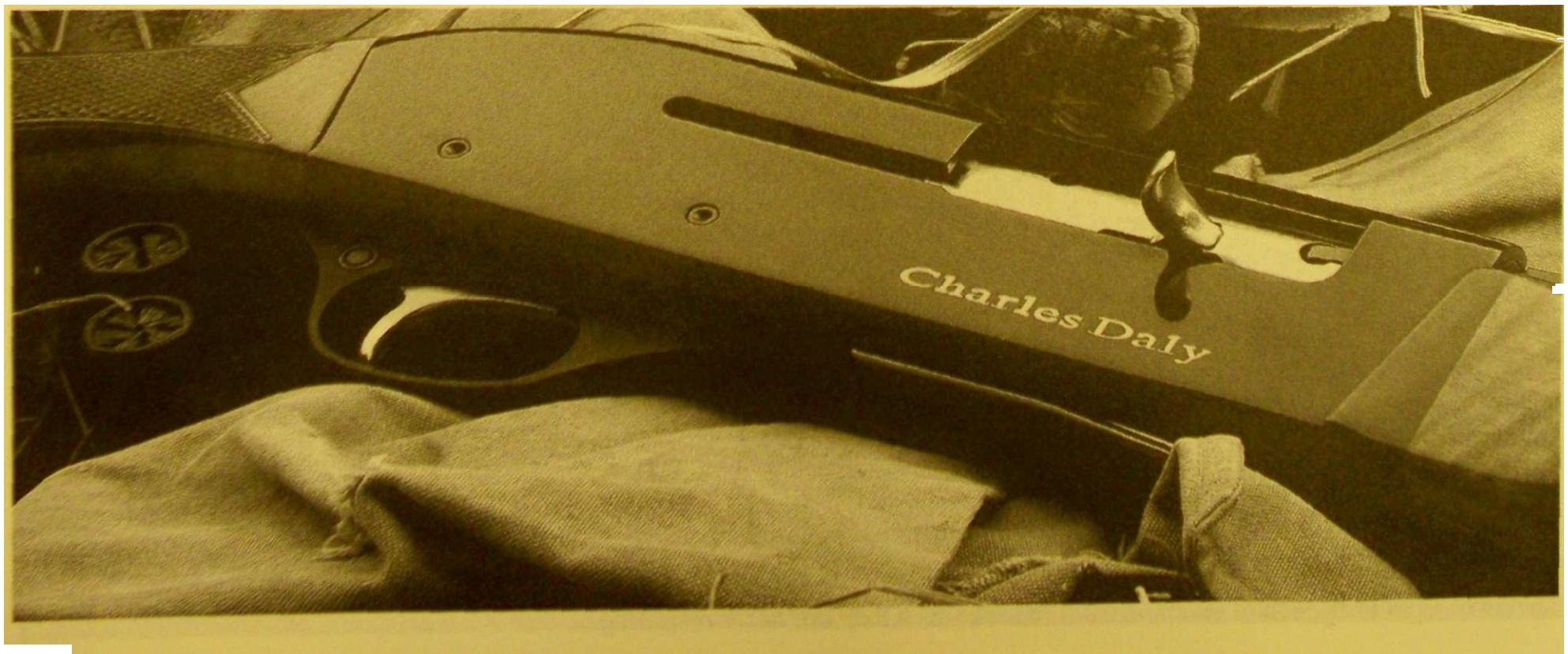
However, in this regard, it is perfectly acceptable to use powder charges falling anywhere between the minimum and maximum listed loads for a combination. For example, if you find your charge bar drops a charge of powder that falls between two of the charges in adjacent velocity listings, a load produced using that charge bar should be perfectly safe. Your velocity will still be close to what simple mathematical interpolation suggests.

Never exceed the maximum powder charge listed. In some instances, this may be tempting. For example, if the maximum charge is listed as generating a moderate pressure, you might believe you can increase the charge by some increment and still produce a safe load with increased velocity. You cannot, because it is possible that the resulting increase in wad pressure will drive chamber pressure dramatically higher (and this possibility is unpredictable). The increased charge will not seat well in the hull and still allow proper crimping. Finally, years of reloading experience suggest that the load produced just will not give you a good shot pattern.

Never substitute any component without verifying that the load you produce is listed and that it will predictably produce the results you want. You will be tempted. Any component substitution is equivalent to an entirely new load. If the required charge weight is sufficiently similar to produce a safe load, it will almost certainly be an accident. Do not assume.

Finally, always double-check to verify that you are looking in the correct section for the shot type you are loading. After a while, columns of data begin to look alike, but data for steel or bismuth or buckshot require particular precautions and wad combinations. You will have to put together many of these wad systems by hand and manually insert them into the hull when you are loading. Keep this complication well in mind... please.

So, yes, you must follow a recipe. Like a cook in a kitchen. But making the effort to find the one recipe that produces the best results in your gun is half the fun, and is one reason you, as a handloader, always have a chance to improve your shotgun's performance.



As you begin to assemble reloading ingredients, you will want to pick up shells at the range. After all, why should you not re-use your own shells? Well, your club or range may have a rule stating that shells on the ground belong to the club and you must purchase hulls from them, usually at some nominal price, normally a few cents each. (Is this fair? Does it make you prefer extractors rather than ejectors? Do you want to add a shell catcher to your ejection port? If the club resells shells, does it have a moral or legal obligation to examine them to make sure they are fit for reloading?)

Chapter 10

COMMON BUSHING CHARTS

WARNING: Read and understand the instruction manuals for your reloading machine and tools. Shotshell reloading tool powder bushings and other fixed volumetric powder measures seldom throw the exact charge as suggested in the tables in this book. There are many reasons for these variations, including lot-to-lot powder density variations. Typical manufacturing tolerances for bulk density of most canister-grade smokeless powders is + .025-gram per cubic centimeter.

Usually, a bushing chart lists the nominal weight of a powder charge based on normal packing as a result of free flow and nominal bulk density for that powder; alternately, some bushing manufacturers give ratings based on the nominal bulk powder density.

Various operators of any given tool will produce differing powder weights using identical tools, bushings and similar techniques. This variation results from differences in the force of operation and the amount of vibration transmitted to and through the tool.

Variations in sizing force, resulting from differences in hulls, can produce differences in dropped charge weight owing to changes in tool vibration.

Bushing manufacturing tolerances are always greater than zero!

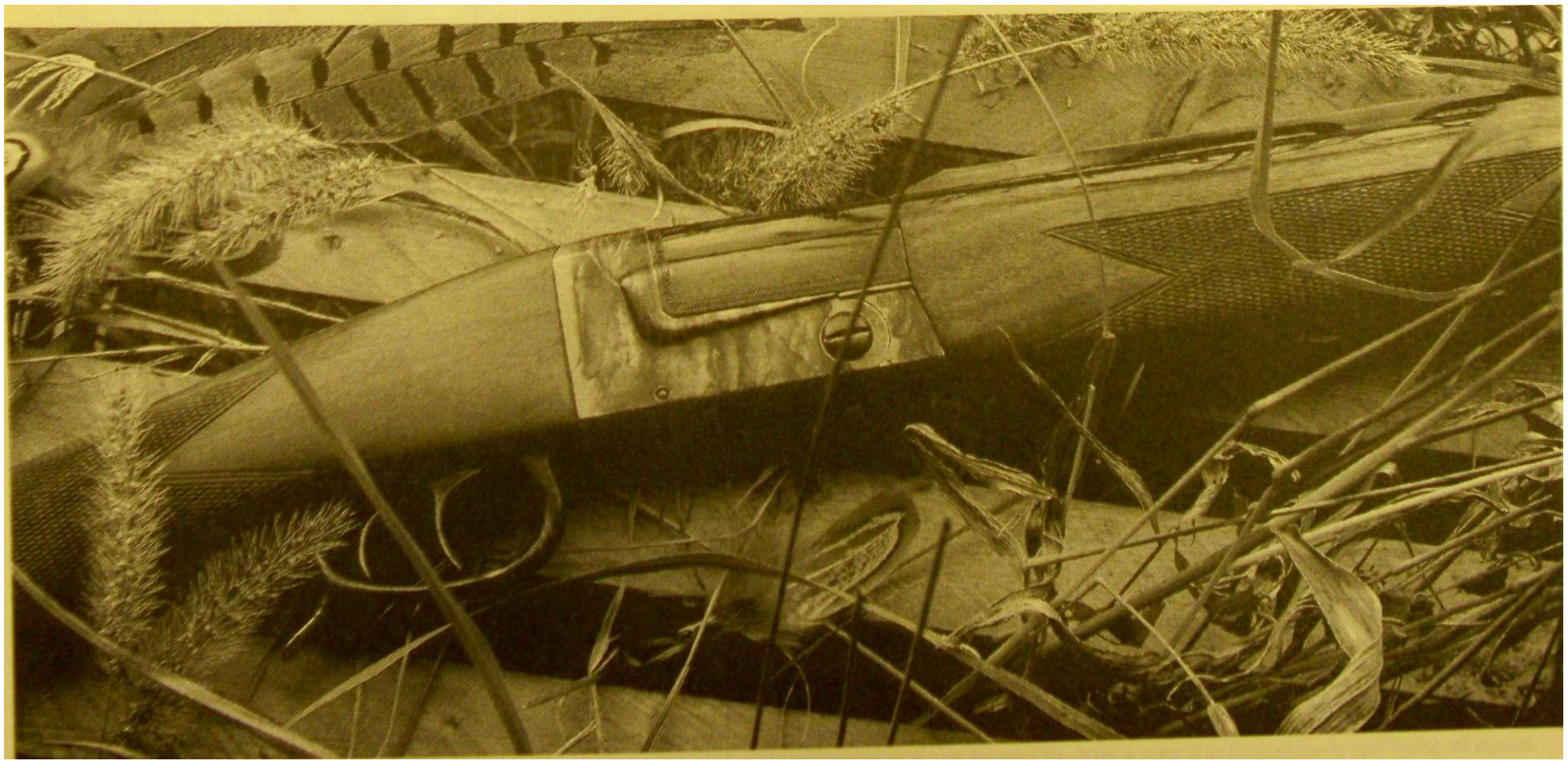
Tool manufacturing tolerances can have an effect.

Mismarked bushings are possible.

Obviously, the handloader cannot expect his results to exactly match any bushing/powder/charge charts listing. These tables simply represent what the manufacturer believes to be the nominal charge thrown with the listed bushing and powder. Proper understanding of this is the key.

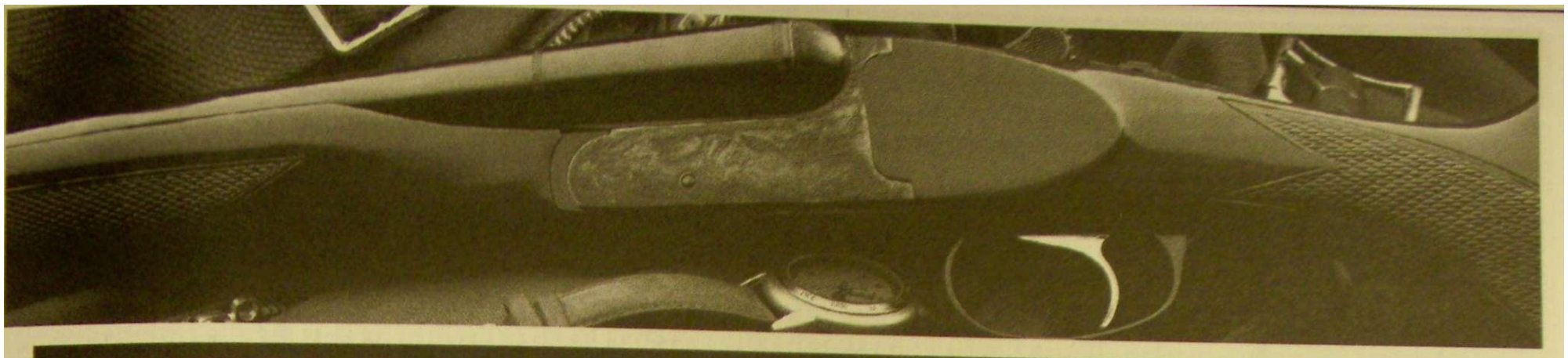
Never attempt to determine the charge that will be thrown by simply metering the powder bar back and forth and weighing the resulting charges. To produce the same amount of vibration and powder packing that will result during normal loading operations, the reloader must follow all usual loading procedures and then weigh the powder charges to determine the average thrown charge for that bushing bar.

For powders not listed, refer to the latest tool manufacturer's data.



POWDER BUSHING CHART FOR HORNADAY AND SPOLAR PRESSES

	HODGDON POWDERS									
GRAINS	Clays	Internat'l	Universal	HS-6	HS-7	H110	Titewad	Lil' Gun	LGSH	Titegroup
11.0		333								
12.0		348						250		
13.0		363	330			256		259		
13.5								266		
14.0		375	342			266			300	
14.7										318
15.0		390	354				384		309	324
16.0	429	402	366				396		318	330
16.5	435	408	372				402		327	336
17.0	441	414	378	300			408		330	342
17.4	447	417	384				414		336	345
18.0	456	423	390	309			420		339	351
18.5	462	429	393				426		345	357
19.0	468	435	402	318	318		432		348	360
19.4	474	438	405				435		354	363
20.0	483	447	411	327	330		441		357	369
20.6	489	453	417				450		363	375
21.0	495	459	420	336	339		453		366	378
21.5	501	465	423				459		369	381
22.0	507	471	429	345	348		462		372	387
22.5		477	432				468		378	390
23.0		483	438	351	357		474		381	396
23.5		489	441						384	399
24.0		495	447	360	363		486		390	405
24.5		501	450				489		393	
25.0		507	456	366	369		492		396	
26.0			468	375	378				405	
27.0			480	381	384				414	
28.0			489	387	390				423	
29.0			501	393	396				429	
30.0				402	405				435	
31.0				408	411				444	
32.0				414	417				450	
33.0				423	423				459	
34.0				429	429				465	
35.0				435	438		471		471	
36.0				441	444				480	
37.0				444	450				486	
38.0				450					492	
39.0									498	



POWDER BUSHING CHART FOR LEE PRESSES - APPROXIMATE THROWN CHARGE IN GRAINS

Powder	LEE BUSHING # .095	100	.105	.110	.116	.122	.128	.134	.141	.148	.155	.163	.171	.180	.189	.198
ACCURATE																
A Nitro 100	11.5	12.1	12.8	13.4	14.1	14.8	15.6	16.3	17.1	18.0	18.8	19.8	20.8	21.9	23.0	24.1
Accur #2	18.6	19.5	20.5	21.5	22.7	23.9	25.0	26.2	27.6	28.9	30.3	31.9	33.4	35.2	36.9	38.7
Accur #5	25.0	26.3	27.6	28.9	30.5	32.1	33.7	35.3	37.1	38.9	40.8	42.9	45.0	47.4	49.7	52.1
Solo 1000	11.7	12.3	12.9	13.5	14.3	15.0	15.8	16.5	17.4	18.2	19.1	20.1	21.1	22.2	23.3	24.4
Solo 1250	12.8	13.4	14.1	14.8	15.6	16.4	17.2	18.0	18.9	19.9	20.8	21.9	23.0	24.2	25.4	26.6
ALLIANT																
Red Dot	11.0	11.6	12.2	12.8	13.5	14.2	14.8	15.5	16.4	17.2	18.0	18.9	19.8	20.9	21.9	23.0
American Select	11.6	12.2	12.8	13.4	14.2	14.9	15.6	16.4	17.2	18.1	18.9	19.9	20.9	22.0	23.1	24.2
Green Dot	12.3	13.0	13.6	14.3	15.1	15.8	16.6	17.4	18.3	19.2	20.1	21.2	22.2	23.4	24,5	25.7
Blue Dot	18.0	19.0	19.9	20.8	22.0	23.1	24.3	25.4	26.7	28.0	29.4	30.9	32.4	34.1	35.8	37.5
Unique	14.3	15.0	15.8	16.5	17.4	18.3	19.2	20.1	21.2	22.2	23.3	24.5	25.7	27.0	28.4	29.7
Herco	13.9	14.6	15.3	16.1	16.9	17.8	18.7	19.6	20.6	21.6	22.6	23.8	25.0	26.3	27.6	28.9
HODGON																
Clays	10.6	11.2	11.8	12.3	13.0	13.7	14.3	15.0	15.8	16.6	17.4	18.3	19.2	20.2	21.2	22.2
Int'l Clays	12.3	12.9	13.6	14.2	15.0	15.8	16.6	17.3	18.3	19.2	20.1	21.1	22.1	23.3	24.5	25.6
Universal Clays	14.2	14.9	15.7	16.4	17.3	18.2	19.1	20.0	21.0	22.1	23.1	24.3	25.5	26.8	28.2	29.5
HS-6	21.9	23.0	24.2	25.3	26.7	28.1	29.4	30.8	32.4	34.0	35.7	37.5	39.3	41.4	43.5	45.5
HS-7	22.9	24.1	25.3	26.5	28.0	29.4	30.8	32.3	34.0	35.7	37.4	39.3	41.2	43.4	45.6	47.7
H110	23.7	25.0	26.2	27.5	29.0	30.5	32.0	33.5	35.2	37.0	38.7	40.7	42.7	45.0	47.2	49.5
H4227	20.2	21.3	22.4	23.4	24.7	26.0	27.3	28.5	30.0	31.5	33.0	34.7	36.4	38.3	40.3	42.2
IMR																
700-X	11.6	12.2	12.8	13.4	14.2	14.9	15.6	16.3	17.2	18.1	18.9	19.9	20.9	22.0	23.1	24.2
800-X	14.5	15.3	16.1	16.8	17.7	18.7	19.6	20.5	21.6	22.6	23.7	24.9	26.2	27.5	28.9	30.3
PB	12.9	13.6	14.3	15.0	15.8	16.6	17.4	18.2	19.2	20.1	21.1	22.2	23.3	24.5	25.7	26.9
SR 4756	14.2	14.9	15.6	16.4	17.3	18.2	19.1	20.0	21.0	22.1	23.1	24.3	25.5	26.8	28.2	29.5
SR 7625	14.9	15.7	16.5	17.2	18.2	19.1	20.1	21.0	22.1	23.2	24.3	25.5	26.8	28.2	29.6	31.0
IMR 4227	20.2	21.3	22.4	23.4	24.7	26.0	27.3	28.5	30.0	31.5	33.0	34.7	36.4	38.3	40.3	42.2
NOBEL																
60	11.4	12.0	12.6	13.2	13.9	14.6	15.4	16.1	16.9	17.8	18.6	19.6	20.5	21.6	22.7	23.8
62	12.7	13.4	14.1	14.7	15.5	16.3	17.2	18.0	18.9	19.8	20.8	21.8	22.9	24.1	25.3	26.5
64	13.5	14.2	14.9	15.6	16.5	17.3	18.2	19.0	20.0	21.0	22.0	23.1	24.3	25.6	26.8	28.1
78	10.3	10.9	11.4	12.0	12.6	13.3	13.9	14.6	15.3	16.1	16.9	17.7	18.6	19.6	20.5	21.5
80	10.6	11.1	11.7	12.2	12.9	13.6	14.2	14.9	15.7	16.5	17.2	18.1	19.0	20.0	21.0	22.0
82	11.5	12.1	12.7	13.3	14.0	14.7	15.5	16.2	17.0	17.9	18.7	19.7	20.6	21.7	22.8	23.9
WINCHESTER																
WAAP	12.0	12.6	123.3	13.9	14.7	15.4	16.2	16.9	17.8	18.7	19.6	20.6	21.6	22.8	23.9	25.0
WSL	18.4	19.3	20.3	21.3	22.4	23.6	24.8	25.9	27.3	28.6	30.0	31.5	33.1	34.8	36.5	38.3
WST	12.9	13.6	14.3	15.0	15.8	16.6	17.4	18.2	19.2	20.1	21.1	22.2	23.3	24.5	25.7	26.9
WSF	18.5	19.5	20.5	21.5	22.6	23.8	25.0	26.1	27.5	28.9	30.2	31.8	33.3	35.1	36.9	38.6
571	22.9	24.1	25.3	26.5	28.0	29.4	30.8	32.3	34.0	35.7	37.4	39.3	41.2	43.4	45.6	47.7
540	22.8	24.0	25.2	26.4	27.8	29.3	30.7	32.2	33.8	35.5	37.2	39.1	41.0	43.2	45.4	47.5

CAUTION: These are not recommended charges as not every bushing is usable with each type of powder. It is a reference chart to determine the charge in grains of each type of powder each bushing will dispense.

POWDER BUSHING CHART FOR MEC PRESSES

POWDER	MEC BUSHING # 7	8	9	10	11	12	12A	13	13A	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
IMR																									
700X				7.1	7.5	7.9	8.4	8.8	9.3	9.8	10.3	10.8	11.3	11.9	12.4	13	13.5	14.1	14.7	15.3	15.9	16.6	17.2	17.9	18.5
800X				8.8	9.3	9.8	10.4	10.9	11.5	12.1	12.7	13.4	14	14.7	15.3	16	16.7	17.5	18.2	18.9	19.7	20.5	21.3	22.1	22.9
PB				7.2	7.6	8.1	8.5	9	9.5	10	10.5	11	11.5	12.1	12.6	13.2	13.8	14.4	15	15.6	16.2	16.9	17.5	18.2	18.9
SR 4756				8.3	8.8	9.3	9.8	10.3	10.9	11.4	12	12.6	13.2	13.8	14.5	15.1	15.8	16.5	17.2	17.9	18.6	19.3	20.1	20.9	21.6
SR 7625				8.2	8.7	9.2	9.7	10.2	10.8	11.3	11.9	12.5	13.1	13.7	14.4	15	15.7	16.3	17	17.7	18.4	19.2	19.9	20.7	21.4
IMR 4227				11.8	12.5	13.3	14	14.8	15.6	16.4	17.2	18.1	18.9	19.8	20.7	21.7	22.6	23.6	24.6	25.6	26.6	27.7	28.8	29.9	31
ALLIANT																									
Red Dot				6.3	6.7	7.1	7.5	7.9	8.3	8.7	9.2	9.6	10.1	10.6	11.1	11.6	12.1	12.6	13.1	13.7	14.2	14.9	15.7	16.4	17.1
American Select				6.9	7.3	7.7	8.2	8.6	9.1	9.6	10.1	10.6	11.1	11.7	12.2	12.8	13.3	13.9	14.5	15.1	15.7	16.4	17	17.7	18.3
Green Dot				6.7	7.2	7.6	8	8.4	8.9	9.3	9.8	10.3	10.8	11.3	11.8	12.4	12.9	13.5	14	14.6	15.2	15.8	16.4	17	17.7
Blue Dot				10.8	11.3	11.9	12.5	13.1	13.7	14.4	15	15.7	16.3	17	17.7	18.4	19.2	20.1	21	21.9	22.8	23.7	24.6	25.5	26.4
Herco				7.9	8.3	8.8	9.3	9.8	10.4	10.9	11.4	12	12.6	13.2	13.8	14.4	15	15.7	16.3	17	17.7	18.4	19.1	19.8	20.6
Unique				7.5	7.9	8.4	8.9	9.4	9.9	10.4	10.9	11.4	12	12.6	13.1	13.7	14.5	15.1	15.8	16.4	17.1	17.7	18.4	19.1	19.8
2400				11.8	12.5	13.3	14	14.8	15.6	16.4	17.2	18.1	18.9	19.8	20.7	21.7	22.6	23.6	24.6	25.6	26.6	27.7	28.8	29.9	31
Bullseye				8.6	9.1	9.6	10.1	10.6	11.2	11.7	12.3	12.9	13.5	14.1	14.8	15.4	16.1	16.8	17.5	18.2	18.9	19.6	20.4	21.2	21.9
410	10.2	10.5	11.1	11.7	12.1	13	13.6	14.5	15.1	15.7	16.6	17.4	18.4	19.2	20.2	21.1	22.1	23.1	24.4	25.6	26.1	26.9	28	29.5	30.3
e3	5.5	5.9	6.4	6.6	7	7.2	7.5	8	8.3	8.9	9.2	9.9	10.5	11	11.7	12.3	12.8	13.4	13.8	14.2	14.8	15.3	15.9	16.4	16.9
HODGDON																									
Clays				6.3	6.7	7	7.4	7.8	8.2	8.6	9.1	9.5	9.9	10.4	10.9	11.4	11.8	12.3	12.9	13.4	13.9	14.5	15	15.6	16.2
Intl. Clays				7.2	7.6	8.1	8.6	9.1	9.6	10.1	10.6	11.1	11.7	12.3	12.8	13.4	14	14.6	15.3	15.9	16.6	17.2	17.9	18.6	19.3
Universal Clays				8.2	8.8	9.3	9.9	10.4	11	11.6	12.2	12.9	13.5	14.2	14.8	15.5	16.2	17	17.7	18.4	19.2	19.7	20.8	21.6	22.4
Lil-Gun	12.1	12.6	13.1	13.6	14.5	15.3	16.2	17.1	18	18.9	19.9	20.9	21.9	22.9	24	25	26.1	27.3	28.4	29.6	30.8	32	33.3	34.5	35.8
Titewad				7.9	8.3	8.8	9.3	9.8	10.4	10.9	11.4	12	12.6	13.2	13.8	14.4	15	15.7	16.3	17	17.7	18.4	19.1	19.8	20.6
Longshot				11.8	12.5	13.3	14	14.8	15.6	16.4	17.2	18.1	18.9	19.8	20.7	21.7	22.6	23.6	24.6	25.6	26.6	27.7	28.8	29.9	31
HS-6				12.6	13.4	14.2	15	15.8	16.7	17.6	18.5	19.5	20.4	21.4	22.4	23.4	24.5	25.6	26.7	27.8	28.9	30.1	31.3	32.5	33.8
HS-7				13.4	14.2	15	14.8	16.7	17.6	18.5	19.5	20.4	21.4	22.4	23.4	24.5	25.6	26.7	27.8	28.9	30.1	31.3	32.5	33.8	35
H110				14.2	15	15.8	16.7	17.6	18.5	19.5	20.4	21.4	22.4	23.4	24.5	25.6	26.7	27.8	28.9	30.1	31.3	32.5	33.8	35	36.3
WINCHESTER																									
WSL																									
WST				7.9	8.3	8.8	9.3	9.8	10.4	10.9	11.4	12	12.6	13.2	13.8	14.4	15	15.7	16.3	17	17.7	18.4	19.1	19.8	20.6
WSF				10.9	11.5	12.2	12.9	13.6	14.3	15	15.8	16.6	17.4	18.2	19	19.9	20.8	21.6	22.6	23.5	24.4	25.4	26.4	27.4	28.4
WAAP																									
296				13.7	14.6	15.4	16.3	17.2	18.1	19	20	21	22	23	24.1	25.1	26.2	27.4	28.5	29.7	30.9	32.1	33.4	34.6	35.9
540																									
RAMSHOT																									
Competition				7.2	7.6	8.1	8.5	9	9.5	10	10.5	11	11.5	12.1	12.6	13.2	13.8	14.4	15	15.6	16.2	16.9	17.5	18.2	18.9
ACCURATE																									
No.5				13.7	14.6	15.4	16.3	17.2	18.1	19	20	21	22	23	24.1	25.1	26.2	27.4	28.5	29.7	30.9	32.1	33.4	34.6	35.9
Scot Solo 1000				6.4	6.8	7.2	7.6	8	8.5	8.9	9.3	9.8	10.3	10.8	11.3	11.8	12.3	12.8	13.3	13.9	14.5	15	15.6	16.2	16.8
No. 2 Imp.				9.4	10	10.5	11.1	11.7	12.3	12.9	13.5	14.2	14.9	15.6	16.3	17	17.7	18.5	19.2	20	20.8	21.6	22.4	23.3	24.1
Scot Nitro 1000				7.1	7.5	7.9	8.4	8.8	9.3	9.8	10.3	10.8	11.3	11.9	12.4	13	13.5	14.1	14.7	15.3	15.9	16.6	17.2	17.9	18.5
Scot Solo 1250				7.2	7.6	8.1	8.5	9.5	9.5	10	10.5	11	11.5	12.1	12.6	13.2	13.8	14.4	15	15.6	16.2	16.9	17.5	18.2	18.9
ADCO																									
Nobel Sport A0				6.4	6.8	7.2	7.6	8	8.5	8.9	9.3	9.8	10.3	10.8	11.3	11.8	12.3	12.8	13.3	13.9	14.5	15	15.6	16.2	16.8
Nobel Sport A1				7.8	8.2	8.7	9.2	9.7	10.2	10.7	11.3	11.7	12.3	12.9	13.4	14	14.8	15.4	16.1	16.7	17.4	18	18.7	19.4	20.1
Nobel Sport AS				6.9	7.3	7.7	8.2	8.6	9.1	9.6	10.1	10.6	11.1	11.7	12.2	12.8	13.3	13.9	14.5	15.1	15.7	16.4	17	17.7	18.3
AS 24				6.7	7.1	7.5	7.9	8.3	8.8	9.1	9.6	10.1	10.6	11.1	11.6	12.1	12.6	13.1	13.6	14.2	14.8	15.3	15.9	16.5	17.1
Vihtavuori Oy																									
3NSL				6.7	7.2	7.6	8	8.4	8.9	9.3	9.8	10.3	10.8	11.3	11.8	12.4	12.9	13.5	14	14.6	15.2	15.8	16.4	17	17.7
3NSM				7.5	7.9	8.4	8.9	9.4	9.9	10.4	10.9	11.4	12	12.6	13.1	13.7	14.3	14.9	15.6	16.2	16.9	17.5	18.2	18.9	19.6
3NSH				7.9	8.3	8.8	9.3	9.8	10.4	10.9	11.4	12	12.6	13.2	13.8	14.4	15	15.7	16.3	17	17.7	18.4	19.1	19.8	20.6

NOTE: This bushing chart does not represent recommend weights of charge. It is intended as a guide only to show the relationship of the volumetric capacity to the various bushings. The amount of powder thrown by bushings was calculated using single stage reloaders. Progressive reloaders tend to throw a lesser amount. Please verify by using an accurate scale.

APPROXIMATE THROWN CHARGE IN GRAINS

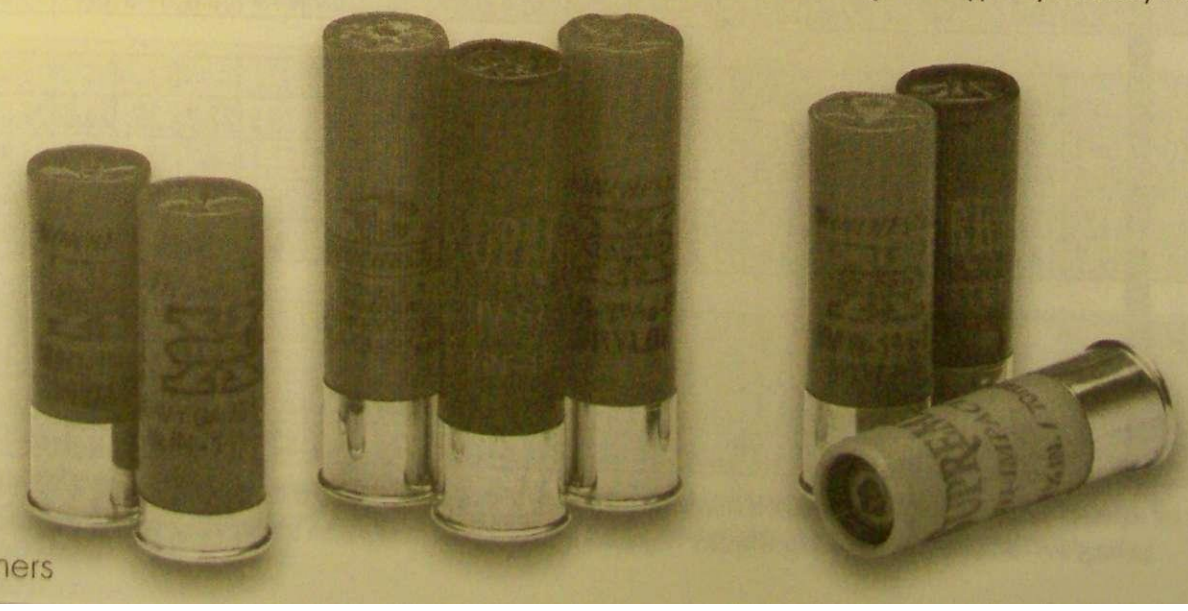
POWDER	MEC BUSHING #																								
	30	31	32	33	34	35	36	37	38	38A	39	39A	40	40A	41	41A	42	42A	43	43A	44	44A	45	45A	46
IMR																									
700X	19.2	19.9	20.6	21.3	22	22.8	23.5	24.3	25.1	25.9	26.7	27.5	28.3	29.1	30	30.9	31.7	32.6	33.5	34.4	35.4	36.6	37.2	38.2	39.2
800X	23.8	24.6	25.5	26.4	27.3	28.2	29.1	30.1	31	32	33	34	35	36.1	37.1	38.2	39.3	40.4	41.5	42.6	43.7	44.9	46.1	47.3	48.5
PB	19.6	20.3	21	21.7	22.5	23.2	24	24.8	25.6	26.4	27.2	28	28.9	29.7	30.6	31.5	32.4	33.3	34.2	35.1	36.1	37	38	39	39.9
SR 4756	22.4	23.2	24.1	24.9	25.7	26.6	27.5	28.4	29.3	30.2	31.2	32.1	33.1	34.1	35	36.1	37.1	38.1	39.2	40.2	41.3	42.4	43.5	44.6	45.8
SR 7625	22.2	23	23.9	24.7	25.5	26.4	27.3	28.1	29	30	30.9	31.8	32.8	33.8	34.7	35.7	36.8	37.8	38.8	39.9	41	42	43.1	44.2	45.4
IMR 4227	32.1	33.3	34.5	35.7	36.9	38.1	39.4	40.7	42	43.3	44.6	46	47.4	48.8	50.2	51.6	53.1	54.6	56.1	57.6	59.2	60.7	62.3	63.9	65.6
ALLIANT																									
Red Dot	17.8	18.5	19.2	19.9	20.6	21.3	21.9	22.7	23.3	24.1	24.7	25.2	25.9	26.6	27.3	27.9	28.4	29.3	29.9	30.8	31.5	32.1	32.7	33.4	34.1
American Select	19	19.7	20.4	21.1	21.8	22.6	23.3	24.1	24.9	25.7	26.5	27.3	28.1	28.9	29.8	30.7	31.5	32.4	33.3	34.2	35.2	36.4	37	38	39
Green Dot	18.3	19	19.6	20.3	21	21.7	22.4	23.2	23.9	24.7	25.4	26.2	27	27.8	28.6	29.4	30.3	31.1	32	32.8	33.7	34.6	35.5	36.4	37.4
Blue Dot	27.3	28.2	29.1	30.5	31.6	32.7	33.8	35	36.1	37.3	38.5	39.7	40.9	42.2	43.4	44.7	46	47.4	48.7	50.1	51.5	52.9	54.3	55.7	57.2
Herco	21.3	22.1	22.9	23.7	24.5	25.3	26.2	27	27.9	28.8	29.7	30.6	31.5	32.4	33.4	34.3	35.3	36.3	37.3	38.3	39.3	40.4	41.4	42.5	43.6
Unique	20.5	21.1	21.7	22.5	23.2	24	24.8	25.6	26.5	27.3	28.2	29	29.9	30.8	31.7	32.6	33.5	34.5	35.4	36.4	37.4	38.4	39.4	40.4	41.4
2400	32.1	33.3	34.5	35.7	36.9	38.1	39.4	40.7	42	43.3	44.6	46	47.4	48.8	50.2	51.6	53.1	54.6	56.1	57.6	59.2	60.7	62.3	63.9	65.6
Bullseye	22.8	23.7	24.6	25.5	26.4	27.3	28.2	29.1	30.1	31	31.9	32.8	33.7	34.7	35.7	36.9	38.1	39.4	40.7	42	43.3	44.6	46	47.4	48.8
410	31.4	32.4	33.6	34.7	35.9	37	38.1	39.3	40.6	42	43.3	45	46.7	48	49.2	50.4	51.7	53	54.8	56.3	57.4	58	59.2	60.4	62
e3	17.4	17.9	18.5	19.5	20.5	21	21.8	22.3	22.8	23.2	23.8	24.5	25.4	26	26.6	27	27.5	28.8	30	31.1	32.2	33.1	33.9	34.8	35.9
HODGDON																									
Clays	16.7	17.3	17.9	18.6	19.2	19.8	20.5	21.1	21.8	22.5	23.2	23.9	24.6	25.3	26	26.8	27.5	28.3	29.1	29.9	30.7	31.5	32.3	33.1	33.9
Intl. Clays	20	20.8	21.5	22.3	23	23.8	24.6	25.4	26.3	27.1	28	28.8	29.7	30.6	31.5	32.4	33.3	34.3	35.2	36.2	37.2	38.2	39.2	40.2	41.2
Universal Clays	23.3	24.1	25	25.9	26.8	27.7	28.6	29.6	30.6	31.5	32.5	33.5	34.5	35.4	36.6	37.7	38.8	39.9	41	42.1	43.2	44.4	45.6	46.8	48
Lil-Gun	37.2	38.5	39.9	41.3	42.7	44.1	45.6	47	48.6	50.1	51.6	53.2	54.8	56.3	58.1	59.8	61.5	63.2	64.9	66.7	68.5	70.3			
Titewad	21.3	22.1	22.9	23.7	24.5	25.3	26.2	27	27.9	28.8	29.7	30.6	31.5	32.4	33.4	34.3	35.3	36.3	37.3	38.3	39.3	40.4	41.4	42.5	43.6
Longshot	32.1	33.3	34.5	35.7	36.9	38.1	39.4	40.7	42	43.3	44.6	46	47.4	48.8	50.2	51.6	53.1	54.6	56.1	57.6	59.2	60.7	62.3	63.9	65.6
HS-6	35	36.3	37.6	38.9	40.3	41.7	43.1	44.5	45.9	47.4	48.9	50.4	52	53.5	55.1	56.7	58.4	60	61.7	63.4	65.1	66.9	68.6	70.4	72.3
HS-7	36.3	37.6	38.9	40.3	41.7	43.1	44.5	45.9	47.4	48.9	50.4	52	53.5	55.1	56.7	58.4	60	61.7	63.4	65.1	66.9	68.6	70.4	72.3	74.1
H110	37.6	38.9	40.3	41.7	43.1	44.5	45.9	47.4	48.9	50.4	52	53.5	55.1	56.7	58.4	60	61.7	63.4	65.1	66.9	68.6	70.4	72.3	74.1	75.1
WINCHESTER																									
WSL																									
WST	21.3	22.1	22.9	23.7	24.5	25.3	26.2	27	27.9	28.8	29.7	30.6	31.5	32.4	33.4	34.3	35.3	36.3	37.3	38.3	39.3	40.4	41.4	42.5	43.6
WSF	29.5	30.5	31.6	32.7	33.8	35	36.1	37.3	38.5	39.7	40.9	42.2	43.4	44.7	46	47.4	48.7	50.1	51.5	52.9	54.3	55.7	57.2	58.6	60.1
WAAP																									
296	37.3	38.6	40	41.1	42.8	44.2	45.7	47.1	48.7	50.2	51.7	53.3	54.9	56.6	58.2	59.9	61.6	63.3	65	66.8	68.6	70.4	72.3	74.1	76
540																									
RAMSHOT																									
Competition	19.6	20.3	21	21.7	22.5	23.2	24	24.8	25.6	26.4	27.2	28	28.9	29.7	30.6	31.5	32.4	33.3	34.2	35.1	36.1	37	38	39	39.9
ACCURATE																									
No.5	37.3	38.6	40	41.4	42.8	44.2	45.7	47.1	48.7	50.2	51.7	53.3	54.9	56.6	58.2	59.9	61.6	63.3	65	66.8	68.6	70.4	72.3	74.1	76
Scot Solo 1000	17.4	18.1	18.7	19.3	20	20.7	21.4	221	22.8	23.5	24.2	24.9	25.7	26.5	27.2	28	28.8	29.6	30.4	31.3	32.1	32.9	33.8	34.7	35.6
No. 2 Imp.	25	25.9	26.8	27.7	28.7	29.6	30.6	31.6	32.6	33.6	34.6	35.7	36.7	37.8	38.9	40	41.2	42.3	43.5	44.6	45.8	47	48.2	49.5	50.7
Scot Nitro 1000	19.2	19.9	20.6	21.3	22	22.8	23.5	24.3	25.1	25.9	26.7	27.5	28.3	29.1	30	30.9	31.7	32.6	33.5	34.4	35.4	36.6	37.2	38.2	39.2
Scot Solo 1250	19.6	20.3	21	21.7	22.5	23.2	24	24.8	25.6	26.4	27.2	28	28.9	29.7	30.6	31.5	32.4	33.3	34.2	35.1	36.1	37	38	39	39.9
ADCO																									
Nobel Sport A0	17.4	18.1	18.7	19.3	20	20.7	21.4	22.1	22.8	23.5	24.2	24.9	25.7	26.5	27.2	28	28.8	29.6	30.4	31.3	32.1	32.9	33.8	34.7	35.6
Nobel Sport A1	20.8	21.4	22	22.8	23.5	24.3	25.1	25.9	26.8	27.6	28.5	29.3	30.2	31.1	32	32.9	33.8	34.8	35.7	36.7	37.7	38.7	39.7	40.7	41.7
Nobel Sport AS	19	19.7	20.4	21.1	21.8	22.6	23.3	24.1	24.9	25.7	26.5	27.3	28.1	28.9	29.8	30.7	31.5	32.4	33.3	34.2	35.5	36.4	37	38	39
AS 24	17.7	18.4	19	19.6	20.3	21	21.7	22.4	23.1	23.8	24.5	25.2	26	26.8	27.5	28	29.1	29.9	30.7	31.6	32.4	33.2	34.1	35	35.9
Vihtavuori Oy																									
3NSL	18.3	19	19.6	20.3	21	21.7	22.4	23.2	23.9	24.7	25.4	26.2	27	27.8	28.6	29.4	30.3	31.1	32	32.8	33.7	34.6	35.5	36.4	37.4
3NSM	20.3	21.1	21.8	22.6	23.3	24.1	24.9	25.7	26.6	27.4	28.3	29.1	30	30.9	31.8	32.7	33.6	34.6	35.5	36.5	37.5	38.5	39.5	40.5	41.5
3NSH	21.3	22.1	22.9	23.7	24.5	25.3	26.2	27	27.9	28.8	29.7	30.6	31.5	32.4	33.4	34.3	35.3	36.3	37.3	38.3	39.3	40.4	41.4	42.5	43.6

NOTE: This bushing chart does not represent recommend weights of charge. It is intended as a guide only to show the relationship of the volumetric capacity to the various bushings. The amount of powder thrown by bushings was calculated using single stage reloaders. Progressive reloaders tend to throw a lesser amount. Please verify by using an accurate scale.

POWDER BUSHING CHART FOR PONSNESS/WARREN PRESSES - APPROXIMATE THROWN CHARGE IN GRAINS

Powder	PONSNESS/WARREN BUSHING DESIGNATIONS																			
	1AX	2AX	3AX	1A	2A	3A	A	B	C	C1	D	D1	E	E1	E2	F	F1	F2	G	G1	H
IMR																					
700X												10.6	12	12.5	13.1	13.9	14.5	14.8	15.7	16	17.1
800X															13.9	16.2	17.1	17.4	18.5	18.8	20
PB												12.2	13.7	14.3	15	15.9	16.5	16.8	17.9	18.2	19.3
SR 4756												13.5	15.1	15.8	16.6	17.5	18.2	18.5	19.7	20	21.3
SR 7625									11.7	12.2	12.7	13.1	14.8	15.4	16.2	17.1	17.8	18.1	19.2	19.5	20.8
IMR 4227							15.1	15.9	16.7	17.5	18.1	18.8	21.1	22	23.1	24.4	25.4	25.8	27.4	27.9	29.6
ALLIANT																					
Red Dot														11.6	12.2	12.9	13.4	13.7	14.5	14.7	15.7
American Select																				16.4	17.5
Green Dot														11.7	12.3	13.1	13.6	13.8	14.7	14.9	15.9
Blue Dot												16.4	18.4	19.2	20.1	21.3	22.2	22.6	23.9	24.3	25.9
Herco												12.3	13.8	14.4	15.1	16	16.6	16.9	18	18.3	19.5
Unique												12.6	14.2	14.8	15.6	16.5	17.2	17.5	18.7	19	20.2
2400					12.3	13.2	15.2	16.1	16.8	17.6	18.3	19	21.3	22.2	23.3	24.7	25.7	26.1	27.7	28.2	30
HODGDON																					
Clays																13.2	13.7	13.9	14.8	15.1	16
Int'l Clays												11.7	13.1	13.7	14.4	15.2	15.8	16.1	17.1	17.3	18.4
Universal Clays									12.5	13	13.2	14	15.7	16.2	17.2	18.1	18.3	18.9	20.2	20.6	22
Lil-Gun	12	12.7	13.1																		
Titewad															14.7	15.6	15.8	16.4	17.4	17.7	18.9
Longshot						13	15	15.5	16.5	17	17.3	18.2	20.7	21.6	22.8	24.2	24.4	25.3	26.8	27.1	29
HS-6						14.5	16.8	17	18.5	19.4	20.2	20.9	23.5	24.5	25.7	27.2	28.3	28.8	30.5	31.1	33
HS-7						15.3	17.6	18.6	19.5	20.4	21.1	21.9	24.6	25.7	26.9	28.5	29.6	30.1	32	32.5	34.6
H110				13.4	14.3	15.4	17.8														
WINCHESTER																					
WSL												16.4	18.9	19.7	20.7	21.9					
WST																					18
WSF										16.1	16.7	17.3	19.5	20.4	21.4	22.6	23.5	23.9	25.4	25.8	27.4
WAAP																					18
296				13.5	14.5	15.6															
540							17.2	18.2	19.1	20.7	21.5	24.1	25.1	26.4	27.9	29	29.8	31.4	32.1	34.2	35.9
								19.1	19.8	20.7	21.5	22.3	25	26.1	27.5	29.1	30.4	31.2	32.8	33.3	35.5
ACCURATE																					
Royal Scot																					
Solo 1000																					
																					16.8

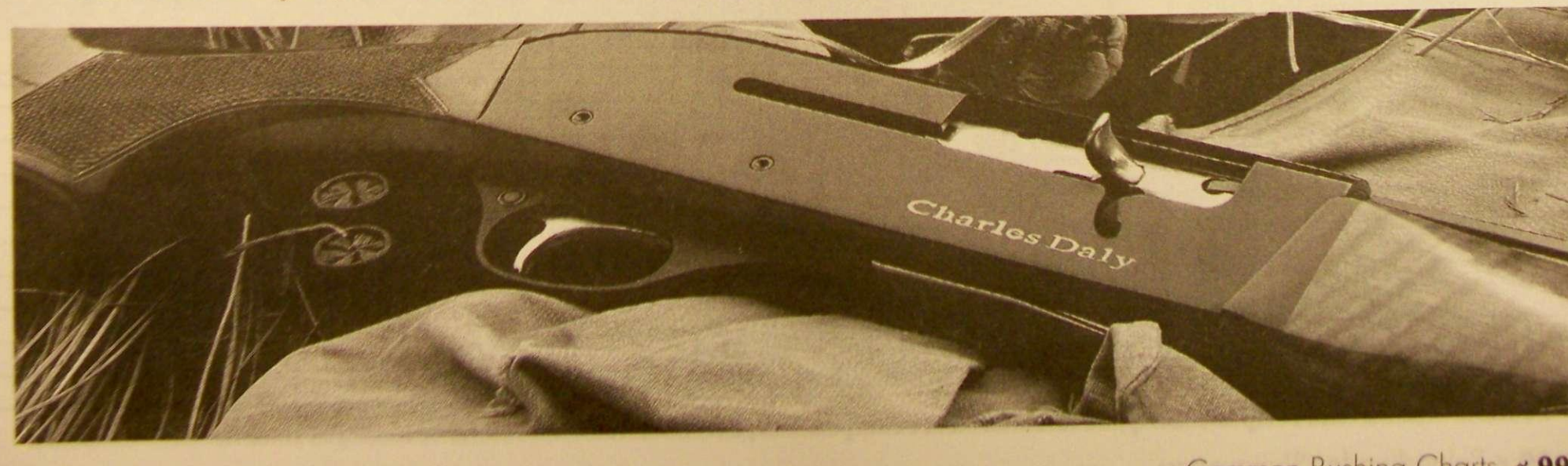
NOTE: This is not a loading table, but rather a chart based on relative hole sizes, showing the approximate number of grains dropped by Ponsness/Warren powder bushings.



POWDER BUSHING CHART FOR PONSNESS/WARREN PRESSES - APPROXIMATE THROWN CHARGE IN GRAINS

Powder	PONSNESS/WARREN BUSHING DESIGNATIONS																		
	I	J	J1	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
IMR																				
700X	17.9	18.3	18.8	19.2	20.2	21.1	22.5	22.8	23.3	23.8	24.7	25.1	26.9	28.2	29	30.6				
800X	21	21.4	22.1	22.5	23.6	24.7	26.4	26.7	27.2	27.8	28.9	29.3	31.4	32.8	33.8	35.8	36.3	38		
PB	20.3	20.8	21.4	21.7	22.9	23.9	25.7	25.9	26.5	27.1	28.2	28.7	30.6	32	33	34.8	35.3	37.1	41.6	
SR 4756	22.4	22.9	23.5	23.9	25.3	26.5	28.3	28.6	29.2	29.8	31	31.5	33.6	35.2	36.3	38.3	38.9	40.8	45.8	49.3
SR 7625	21.8	22.2	22.9	23.3	24.5	25.6	27.4	27.7	28.3	28.8	30	30.4	32.6	34.1	35.2	37.1	37.6	39.5	44.3	
IMR 4227	31.2	31.8	32.7	33.3	35	36.6	39.2	39.6	40.4	41.2	42.9									
ALLIANT																				
Red Dot	16.5	16.8	17.3	17.6	18.5	19.4	20.7	20.9	21.3	21.9	22.9									
American Select	18.2	18.8	19.4	19.9	20.6	22														
Green Dot	16.7	17	17.5	17.9	18.8	19.6	21.1	21.3	21.8	22.3	23.2	23.6	25.3	26.5						
Blue Dot	2.2	27.7	28.5	29.1	30.6	31.9	34.2	34.5	35.2	36	37.5	38.1	40.7	42.5	43.8	46.5	47.2	49.5	55.7	
Herco	20.5	20.9	21.5	21.9	23	24	25.7	26	26.5	27.1	28.1	28.8	30.7	32.1	33.1	34.9	35.4	37.2		
Unique	21.2	21.7	22.3	22.7	24	25	26.8	27.1	27.6											
2400	31.5	32.2	33.1	33.7	35.5	37.1	39.8	40.2	41.1	42	43.8	44.5	47.5	49.8						
HODGDON																				
Clays	16.8	17.2	17.7	18	18.9	19.8	21.2	21.5	21.9											
Int'l Clays	19.4	19.8	20.3	20.7	21.8	23.6	24.4													
Universal Clays	22.8	23.9	24.5	24.8	25.7	26.8	28.2	28.5												
Lil-Gun																				
Titewad	19.6	20.3	21	21.3	22.2	23.4	25.2													
Longshot	30	31.2	32	32.5	34	35.7	38	38.5	39.9	40.1	41.8	42.5								
HS-6	34.7	35.4	36.4	37.1	39	40.8	43.6	44.1	45											
HS-7	36.3	37.1	38.2	38.8	40.8	42.7	45.7	46.2	47.1											
H110																				
WINCHESTER																				
WSL																				
WST	19.5	19.9	20.5	20.8	21.9	22.9														
WSF	28.8	29.4	30.3	30.8	32.4															
WAAP	19.5	19.9	20.5	20.8	21.9	22.9														
296																				
540	36.6	37.7	38.4	40.3	42.2	45.2														
	37.2	38	39.1	39.8	41.8	43.8	47	47.5	48.4											
ACCURATE																				
Royal Scot					16.7	17.5	19	19.2	19.5	20.4	21.2	21.6	23	24.2						
Solo 1000	17.7	18	18.6	18.9	19.9	20.8	22.2	22.5	23	23.5	24.5									

NOTE: This is not a loading table, but rather a chart based on relative hole sizes, showing the approximate number of grains dropped by Ponsness/Warren powder bushings.



Chapter 11

.410 LOAD DATA

.410 BORE

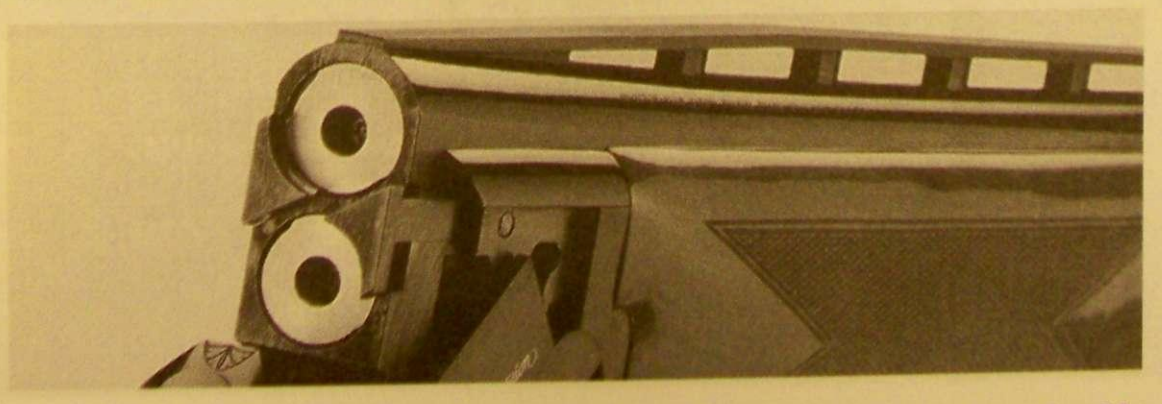
Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum	Powder Charge (grains)/ Velocity (fps) Maximum	Maximum Pressure	Load Notes
2 1/2": 1/2 Ounce Lead Shot						
Ballistic Products: Multi-Hull 4103A.1						
Ch. 209	Longshot	BP MG410		8.0/1150	10,500 psi	OSC
Ch. 209	Longshot	BP Stretch 36		8.0/1155	11,100 psi	OSC
Ch. 209	IMR 4227	BP MG410		15.0/1000	8,500 psi	OSC
Ch. 209	IMR 4227	BP Stump 36		17.0/1125	9,100 psi	OSC
Ch. 209	4100	BP MG410		17.0/1130	9,000 psi	OSC
Ch. 209	2400	BP Stump 36		17.0/1420	11,200 psi	OSC
Ch. 209	2400	BP MG410		15.0/1255	9,900 psi	OSC
Ch. 209	296	BP MG410		15.0/1125	7,100 psi	OSC
Ch. 209	Lil' Gun	BP MG410		13.0/1170	9,400 psi	OSC
Ch. 209	Lil' Gun	BP MG410		13.2/1200	9,700 psi	OSC

Load Notes: OSC= Overshot card.

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

.410 BORE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum	Powder Charge (grains)/ Velocity (fps) Maximum	Maximum Pressure	Load Notes
Federal: Plastic (Paper Base Wad)						
CCI 209M	Alliant 410	Fed. 410SC		11.5/1200	10,600 psi	
Fed. 209A	Alliant 410	WAA41		11.5/1200	10,500 psi	
Fed. 209A	Alliant 410	SP410		11.5/1200	10,700 psi	
Fed. 209A	Alliant 410	Duster 4150		11.5/1200	10,000 psi	
Fed. 209A	Alliant 410	CB 1050-41		11.5/1200	10,500 psi	
Fed. 209A	Alliant 410	Fed. 410SC		11.5/1200	10,500 psi	
Fed. 209A	Alliant 410	Duster 4150		11.9/1200	11,800 psi	
Fed. 209A	Alliant 410	Fed. 410SC		11.9/1200	12,000 psi	
Fed. 209A	Alliant 410	Rem. SP410		11.8/1200	11,800 psi	
Fed. 209A	Alliant 410	WAA41		11.8/1200	11,500 psi	
Fed. 209A	Alliant 410	CB 1050-41		11.8/1200	11,400 psi	
Fed. 209A	H110	Fed. 410SC		15.0/1200	10,200 psi	
Fed. 209A	H110	Pat.Ctrl.Orange		15.5/1200	8,500 psi	
Fed. 209A	IMR 4227	CB 1050-41		17.5/1190	12,200 psi	
Fed. 209A	IMR 4227	Fed. 410SC		17.5/1195	12,200 psi	
Fed. 209A	IMR 4227	Pat.Ctrl.410		17.0/1170	12,500 psi	
Fed. 209A	IMR 4227	Rem. SP410		17.0/1155	12,000 psi	
Fed. 209A	IMR 4227	Trico #4		17.0/1165	12,000 psi	
Rem. 209P	IMR 4227	Rem. SP410		18.5/1180	10,700 psi	
Win. 209	H110	Pat.Ctrl.Orange		15.5/1200	8,400 psi	
Win. 209	H110	WAA41		15.0/1200	9,700 psi	
Win. 209	IMR 4227	CB 1050-41		18.0/1165	11,300 psi	
Win. 209	IMR 4227	Pat.Ctrl.410		18.5/1215	11,800 psi	
Win. 209	IMR 4227	Rem. SP410		18.0/1200	12,000 psi	
Win. 209	IMR 4227	Trico #4		18.0/1170	11,400 psi	
Remington: Plastic						
CCI 209M	Alliant 410	SP410		12.2/1200	9,800 psi	
CCI 209SC	H110	Rem. SP410		15.0/1200	9,700 psi	
Fed. 209A	IMR 4227	CB 1050-41		18.0/1210	12,500 psi	
Fed. 209A	IMR 4227	Fed. 410SC		17.5/1195	12,400 psi	
Fed. 209A	IMR 4227	Pat.Ctrl.410		17.5/1195	12,500 psi	
Fed. 209A	IMR 4227	Trico #4		17.0/1160	11,900 psi	
Rem. 209P	H110	Fed. 410SC		15.0/1200	9,500 LUP	
Rem. 209P	H110	Pat.Ctrl.Orange		16.5/1200	7,000 psi	
Rem. 209P	H110	Rem. SP410		15.0/1200	9,400 LUP	
Rem. 209STS	Alliant 410	SP410		12.0/1200	9,500 psi	
Rem. 209STS	Alliant 410	Fed. 410SC		12.2/1200	10,700 psi	
Rem. 209STS	Alliant 410	WAA41		12.3/1200	8,800 psi	
Rem. 209STS	Alliant 410	CB 1050-41		12.3/1200	8,700 psi	
Rem. 209STS	Alliant 410	Duster 4150		12.8/1200	9,900 psi	
Rem. 209STS	Alliant 410	SP410		12.7/1200	9,700 psi	
Win. 209	IMR 4227	CB 1050-41		18.0/1160	11,000 psi	
Win. 209	IMR 4227	Pat.Ctrl.410		17.5/1160	11,200 psi	
Win. 209	W296	Rem. SP410		15.0/1200	9,500 psi	



"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

.410 BORE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum	Powder Charge (grains)/ Velocity (fps) Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type						
CCI 209	Alliant 410	WAA41		11.5/1200	11,100 psi	
CCI 209	Alliant 410	WAA41		11.9/1200	11,800 psi	
CCI 109	W296	Fed. 410SC		14.0/1200	9,900 LUP	
CCI 109	W296	WAA41	13.5/1150	14.0/1200	9,100 LUP	
CCI 209SC	H110	WAA41		14.0/1200	10,700 psi	
Fed. 209A	AA 4100	FC410SC		13.5/1200	12,600 psi	
Fed. 209A	AA 4100	Pat.Ctrl.410		13.5/1200	10,700 psi	
Fed. 209A	AA 4100	Rem. SP410		13.5/1200	11,100 psi	
Fed. 209A	AA 4100	WAA41		13.5/1200	11,200 psi	
Fed. 209A	H110	Pat.Ctrl.Orange		15.0/1200	9,000 psi	
Fed. 399	H110	WAA41		14.0/1200	10,200 LUP	
Rem. 209P	IMR 4227	Trico #4		17.0/1145	11,600 psi	
Win. 209	Alliant 410	CB 1050-41		11.5/1200	10,100 psi	
Win. 209	Alliant 410	Duster 4150		11.4/1200	11,100 psi	
Win. 209	Alliant 410	Fed. 410SC		11.0/1200	11,600 psi	
Win. 209	Alliant 410	Rem. SP410		11.5/1200	10,800 psi	
Win. 209	Alliant 410	CB 1050-41		11.9/1200	10,900 psi	
Win. 209	H110	Fed. 410SC		14.0/1200	9,100 LUP	
Win. 209	H110	Pat.Ctrl.Orange		14.0/1200	9,500 psi	
Win. 209	H110	WAA41		14.0/1200	9,900 LUP	
Win. 209	a	WAA41		13.0/1200	11,700 psi	
Win. 209	IMR 4227	Pat.Ctrl.410		16.5/1140	12,300 psi	
Win. 209	IMR 4227	Trico #4		17.0/1160	12,400 psi	
Win. 209	W296	Fed. 410SC		14.0/1200	10,300 LUP	
Win. 209	W296	WAA41	13.5/1150	14.0/1200	9,800 LUP	
Win. AATP	W296	WAA41	13.0/1145	14.0/1200	10,700 psi	#1
	Load Notes: #1 = This load duplicates ballistics of Winchester's AA target loading.					
2 1/2": 7/16 Ounce Lead Shot						
Ballistic Products: Multi-Hull 4103A.1						
Ch. 209	IMR 4227	BP Stretch 36		16.0/1060	8,600 psi	OSC
Ch. 209	H110	BP Stretch 36		18.0/1290	7,700 psi	OSC
Ch. 209	2400	BP Stretch 36		15.0/1220	9,200 psi	OSC
Ch. 209	Lil' Gun	BP Stretch 36		13.2/1200	9,000 psi	OSC
	Load Notes: OSC= Overshot card.					
3": 1/2 Ounce Lead Shot						
Ballistic Products: Multi-Hull 4103A.1						
Ch209	Stretch 36	H110		18.0/1280	6,400 psi	
Ch209	4100	MG410		17.0/1310	9,000 psi	
3": 5/8 Ounce Lead Shot						
Ballistic Products: Multi-Hull 410 3A.1						
Ch209	Lil' Gun	BP Stretch 36		13.0/1150	10,000 psi	
Ch209	H110	BP MG410		16.0/1200	9,200 psi	
Ch209	H110	BP Stump 36		16.0/1225	9,600 psi	
Winchester: Compression-Formed AA Type						
Rem. 209P	IMR 4227	Fed. 410SC		18.5/1160	11,300 LUP	
Rem. 209P	IMR 4227	Rem. SP410		18.0/1160	11,000 LUP	
Rem. 209P	IMR 4227	Trico #4		20.0/1230	11,900 LUP	
Win. 209	IMR 4227	Fed. 410SC		17.5/1160	12,400 LUP	
Win. 209	IMR 4227	Rem. SP410		17.4/1160	12,400 LUP	
Win. 209	IMR 4227	Trico #4		18.8/1220	12,400 LUP	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

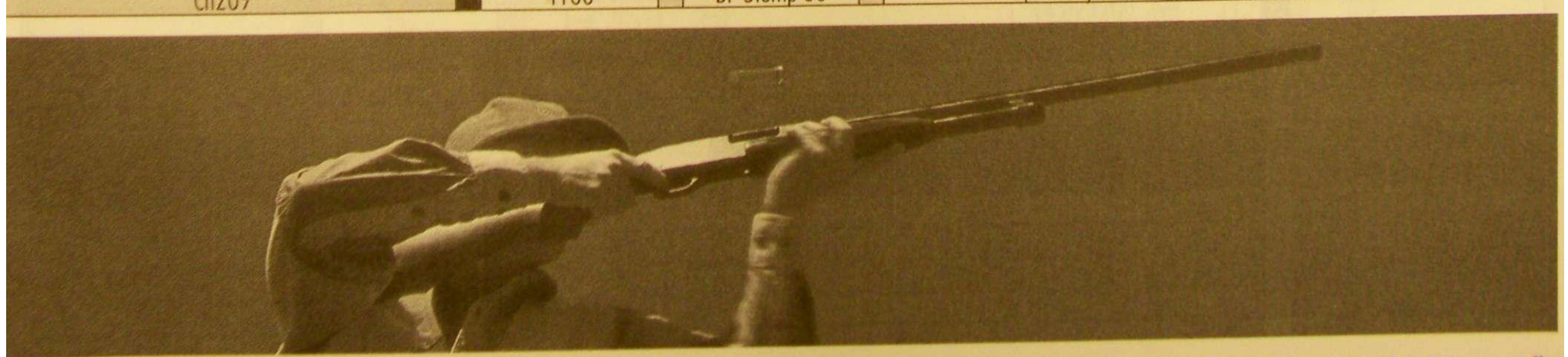
.410 BORE

.410 BORE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum	Powder Charge (grains)/ Velocity (fps) Maximum	Maximum Pressure	Load Notes
Ballistic Products: Multi-Hull 4103A.1						
Ch209	H110	BP MG410		16.0/1200	9,700 psi	
Ch209	H110	BP Stump 36		16.0/1225	10,000 psi	
Ch209	Lil' Gun	BP Stump 36		13.0/1160	11,300 psi	
Ch209	4100	BP Stump 36		16.0/1200	12,000 psi	
Federal: Plastic (Paper Base Wad)						
Fed. 209A	H110	Fed. 410SC		16.5/1200		
Fed. 410	IMR 4227	Fed. 410SC		17.5/1125		
Fed. 410	IMR 4227	Rem. SP410		17.5/1125		
Fed. 410	IMR 4227	Trico #4		19.5/1215		
Win. 209	H110	Pat.Ctrl.Orange		17.0/1200		
Win. 209	IMR 4227	Fed. 410SC		17.5/1140		
Remington: Plastic						
CCI 209M	H110	Rem. SP410		16.0/1200	12,300 psi	
CCI 209M	Alliant 2400	Rem. SP410		14.5/1135	12,200 psi	
Fed. 410	Alliant 2400	Rem. SP410		14.0/1135	12,700 psi	
Rem. 209P	H110	Rem. SP410		15.5/1135	10,600 psi	
Rem. 209P	IMR 4227	Fed. 410SC		18.5/1140	10,300 LUP	
Rem. 209P	IMR 4227	Rem. SP410		18.5/1135	9,800 LUP	
Rem. 209P	IMR 4227	Trico #4		20.5/1210	11,100 LUP	
Rem. 97*	Alliant 2400	Fed. 410SC		14.5/1135	12,600 psi	
Rem. 97*	Alliant 2400	Rem. SP410		14.5/1135	13,000 psi	
Rem. 97*	Alliant 2400	WAA41		14.5/1135	12,300 psi	
Win. 209	H110	Pat.Ctrl.Orange		16.5/1200	12,100 psi	
Win. 209	H110	WAA41		15.0/1135	10,800 psi	
Win. 209	IMR 4227	Fed. 410SC		17.5/1140	12,00 LUP	
Win. 209	IMR 4227	Rem. SP410		17.5/1135	11,500 LUP	
Win. 209	IMR 4227	Trico #4		19.0/1180	11,300 LUP	
Winchester: Compression-Formed AA Type						
Fed. 209A	H110	Fed. 410SC		15.7/1200	13,000 psi	
Fed. 410	H110	Fed. 410SC		14.0/1135	10,700 LUP	
Fed. 410	W296	Fed. 410SC		14.0/1135	10,600 LUP	
Fed. 410	W296	WAA41		14.0/1135	10,000 LUP	
Win. 209	H110	WAA41		13.5/1135	10,900 LUP	
Win. 209	H110	WAA41		16.0/1200	12,900 psi	
Win. 209	W296	Fed. 410SC		13.5/1135	10,800 LUP	
Win. 209	W296	WAA41		13.5/1135	10,800 LUP	#1

Load Notes: #1 = This load duplicates ballistics of Winchester's Super-X loading.

3": 3/4 Ounce Lead Shot						
Ballistic Products: Multi-Hull 4103A.1						
Ch209	4100	BP Stump 36		15.0/1165	11,600 psi	



"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

Chapter 12

28-GAUGE LOAD DATA

28 GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum		Maximum	Maximum Pressure	Load Notes
2 1/2": 5/8 Ounce Lead Shot							
Fiocchi: Purple Target (High Base Wad)							
Fio. 615	Blue Dot	BP BW28	21.0/1330	21.5/1365	22.0/1410	8,500 psi	
Fio. 616	Blue Dot	BP SG28	21.5/1350	21.7/1370	22.0/1400	8,400 psi	
Fio. 616	Herco	BP BW28	17.1/1395	17.1/1395	17.2/1405	10,200 psi	
Fio. 616	Herco	BP SG28	16.0/1350	16.5/1350	17.0/1380	9,900 psi	
Fio. 616	Universal	SG28-II			17.0/1285	11,500 psi	OSC/Roll Crimp
	Load Notes: OSC/Roll Crimp= Overshot card, Roll Crimp.						
2 1/2": 3/4 Ounce Lead Shot							
Fiocchi: Plastic							
Fio. 616	Universal	HV28			15.0/1295	11,900 psi	OSC/Roll Crimp
Fio. 616	HS-6	SG28-II			19.0/1280	10,820 psi	OSC/Roll Crimp
Fio. 616	Longshot	SG28-II			15.0/1240	12,200 psi	OSC/Roll Crimp
2 1/2": 7/8 Ounce Lead Shot							
Fiocchi: Plastic							
Fio. 616	Longshot	HV28			15.0/1235	11,933 psi	OSC/Roll Crimp
2 3/4": 1/2 Ounce Lead Shot							
Winchester AA							
Win 209N	IMR PB	BW28			18.0/1350	11,550 psi	OSC
	Load Notes: OSC/Roll Crimp= Overshot card, Roll Crimp.						
2 3/4": 5/8 Ounce Lead Shot							
Ballistic Products: Multi-Hull 28 2A.1							
Ch. 209	Longshot	BW28			22.0/1470	12,233 psi	OSC, Roll Crimp
Ch. 209	Solo 1250	BW28			16.0/1340	9,200 psi	OSC
Ch. 209	Herco	SG28-II			17.0/1380	9,875 psi	OSC
Federal							
Fed. 209A	Blue Dot	BW28			22.0/1385	10,600 psi	OSC
	Load Notes: OSC/Roll Crimp= Overshot card, Roll Crimp.						
Federal: Plastic (Paper Base Wad)							
CCI 209	Blue Dot	BP BW28			22.0/1400	8,500 psi	
CCI 209	Herco	BP BW28	16.0/1320	16.5/1350	17.0/1380	8,900 psi	
Rem. 209P	Blue Dot	BP BW28	21.0/1350	21.5/1375	22.0/1390	8,500 psi	
Rem. 209P	Herco	BP BW28	16.0/1320	26.5/1335	17.0/1350	9,200 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

28 GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum		Maximum	Maximum Pressure	Load Notes
Federal: Plastic (Paper Base Wad)							
CCI 209	Solo 1250	BP SG28			13.0/1155	11,400 psi	#1
Rem. 209	Solo 1250	BP SG28			13.5/1200	10,300 psi	#1
	Load Notes: #1 = #9 shot only.						
Remington: Premier & Nitro 27 & STS & Unibody (Integral Plastic Base Wad)							
Rem. 209	Solo 1250	BP SG2	12.5/1155	12.8/1180	13.0/1200	10,400 psi	#1
	Load Notes: #1 = #9 shot only.						
Winchester: Compression-Formed AA Type							
CCI 209	IMR PB	Fed. 28.S1			12.3/1165	11,200 LUP	
CCI 209	IMR SR-4756	Fed. 28.S1			16.5/1265	11,400 LUP	
CCI 209	IMR SR-7625	Fed. 28.S1			13.7/1210	11,300 LUP	
Fed. 209	IMR SR-4756	WAA 28			15.0/1215	10,600 LUP	
Win. 209	IMR PB	WAA 28			12.6/1190	11,200 LUP	
Win. 209	Solo 1250	WAA 28			11.0/1155	12,000 psi	
Win. 209	IMR SR-4756	Fed. 28.S1			15.6/1225	11,200 LUP	
Win. 209	IMR SR-4756	WAA 28			15.0/1175	9,000 LUP	
Win. 209	IMR SR-7625	WAA 28			14.0/1225	10,300 LUP	
	Load Notes: #1 = #9 shot only.						
2 3/4": 3/4 Ounce Lead Shot							
Ballistic Products: Multi-Hull 28 2.1A							
CH209	LONGSHOT	BW28			19.0/1345	10,950 psi	OSC
CH209	IMR SR-7625	BW28			14.0/1275	9,350 psi	OSC
CH209	LONGSHOT	SG28-II			16.5/1325	11,440 psi	OSC, Roll Crimp
CH209	IMR SR-4756	SG28-II			19.0/1325	11,850 psi	OSC
	Load Notes: OSC/Roll Crimp= Overshot card, Roll Crimp.						
Federal: Plastic (Paper Base Wad)							
CCI 109	Blue Dot	Rem. SP28			18.5/1200	9,800 psi	
CCI 109	Herco	Rem. SP28			14.5/1200	10,000 psi	
CCI 109	Herco	WAA28			15.0/1200	10,500 psi	
CCI 109	Unique	Rem. SP28			13.5/1200	9,400 psi	
CCI 109	Unique	WAA28			14.0/1200	10,400 psi	
CCI 209	Solo 1250	Fed. 28S1			13.0/1155	12,500 psi	
Fed. 209	Blue Dot	Fed. 28S1A			17.5/1200	9,600 psi	
Fed. 209	Blue Dot	Rem. SP28	18.0/1200	19.0/1250	20.0/1295	10,900 psi	
Fed. 209	Blue Dot	WAA28			17.5/1200	8,7090 psi	
Fed. 209	Herco	Fed. 28S1A			14.0/1200	11,700 psi	
Fed. 209	Herco	Rem. SP28			13.0/1200	10,100 psi	
Fed. 209	Herco	WAA28			14.0/1200	10,900 psi	
Fed. 209	Solo 1250	Fed.28S1			14.5/1200	11,300 psi	
Fed. 209	Unique	Fed. 28S1A			13.5/1200	11,600 psi	
Fed. 209	Unique	Rem. SP28			13.0/1200	11,200 psi	
Fed. 209	Unique	WAA28			13.5/1200	10,500 psi	
Fed. 209	Universal	Rem. PT28			14.0/1200	10,800 psi	
Fed. 209A	IMR 800-X	CB 1034-28			13.5/1200	10,000 psi	
Fed. 209A	IMR 800-X	Fed. 28S1			13.5/1205	11,000 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

28 GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum	Maximum	Maximum Pressure	Load Notes
Federal: Plastic (Paper Base Wad)						
Fed. 209A	IMR 800-X	Pat.Ctrl.28		13.5/1215	10,600 psi	
Fed. 209A	IMR 800-X	Rem. PT28		13.5/1205	10,700 psi	
Fed. 209A	IMR 800-X	WAA28		13.5/1195	10,100 psi	
Fed. 209A	IMR PB	CB 1034-28		13.0/1165	12,100 psi	
Fed. 209A	IMR PB	Rem. PT28		13.0/1160	12,300 psi	
Fed. 209A	IMR PB	WAA28		13.0/1165	12,400 psi	
Fed. 209A	IMR SR-4756	Fed. 28S1		15.5/1205	11,900 psi	
Fed. 209A	IMR SR-4756	Pat.Ctrl.28		15.5/1210	11,400 psi	
Fed. 209A	IMR SR-4756	Rem. PT28		15.5/1200	11,400 psi	
Fed. 209A	IMR SR-7625	CB 1034-28		14.0/1195	12,000 psi	
Fed. 209A	IMR SR-7625	Fed. 28S1		14.0/1185	12,000 psi	
Fed. 209A	IMR SR-7625	Pat.Ctrl.28		14.0/1195	11,900 psi	
Fed. 209A	IMR SR-7625	Rem. PT28		15.5/1195	11,800 psi	
Fed. 209A	IMR SR-7625	WAA28		14.5/1215	12,300 psi	
Fed. 209A	Universal	Rem. PT28		14.2/1200	11,400 psi	
Rem. 209P	Blue Dot	BW28		20.0/1246	8,480 psi	OSC
Rem. 209P	IMR 800-X	CB 1034-28		14.0/1205	9,800 psi	
Rem. 209P	IMR 800-X	Fed. 28S1		14.0/1210	10,400 psi	
Rem. 209P	IMR 800-X	Pat.Ctrl.28		14.0/1200	9,600 psi	
Rem. 209P	IMR 800-X	Rem. PT28		14.0/1195	9,900 psi	
Rem. 209P	IMR 800-X	WAA28		14.5/1210	9,500 psi	
Rem. 209P	IMR PB	Fed. 28S1		14.0/1190	12,200 psi	
Rem. 209P	IMR PB	Pat.Ctrl.28		14.5/1200	11,500 psi	
Rem. 209P	IMR PB	Rem. PT28		14.5/1200	11,700 psi	
Rem. 209P	IMR PB	WAA28		14.5/1205	11,400 psi	
Rem. 209P	IMR SR-4756	Fed. 28S1		16.5/1195	9,800 psi	
Rem. 209P	IMR SR-4756	Pat.Ctrl.28		16.0/1185	9,600 psi	
Rem. 209P	IMR SR-4756	Rem. PT28		17.0/1170	10,300 psi	
Rem. 209P	IMR SR-7625	Fed. 28S1		14.5/1190	10,800 psi	
Rem. 209P	IMR SR-7625	Pat.Ctrl.28		15.0/1190	10,200 psi	
Rem. 209P	IMR SR-7625	Rem. PT28		15.0/1205	10,100 psi	
Rem. 209P	IMR SR-7625	WAA28		14.5/1185	10,500 psi	
Win. 209	IMR 800-X	CB 1034-28		13.5/1190	9,800 psi	
Win. 209	IMR 800-X	Fed. 28S1		13.5/1200	10,500psi	
Win. 209	IMR 800-X	Pat.Ctrl.28		13.5/1190	9,900 psi	
Win. 209	IMR 800-X	Rem. PT28		13.5/1190	10,100 psi	
Win. 209	IMR 800-X	WAA28		14.0/1210	10,000 psi	
Win. 209	IMR PB	Fed. 28S1		14.0/1185	12,500 psi	
Win. 209	IMR PB	Pat.Ctrl.28		14.5/1210	12,000 psi	
Win. 209	IMR PB	Rem. PT28		14.5/1205	12,100 psi	
Win. 209	IMR PB	WAA28		14.5/1215	11,900 psi	
Win. 209	IMR SR-4756	Fed. 28S1		16.0/1195	10,600 psi	
Win. 209	IMR SR-4756	Pat.Ctrl.28		16.0/1200	10,300 psi	
Win. 209	IMR SR-4756	Rem. PT28		16.0/1190	10,500 psi	
Win. 209	IMR SR-7625	Fed. 28S1		15.0/1205	11,200 psi	
Win. 209	IMR SR-7625	Pat.Ctrl.28		15.0/1205	10,900 psi	
Win. 209	IMR SR-7625	Rem. PT28		15.0/1200	11,100 psi	
Win. 209	IMR SR-7625	WAA28		14.5/1185	10,800 psi	
Win. 209	Universal	Pat.Ctrl.28		13.8/1200	10,200 psi	
Fiocchi: Purple Target (High Base Wad)						
Fio. 616	Universal	Rem. PT28		14.2/1200	10,600 psi	
Win. 209	Universal	Pat.Ctrl.28		14.2/1200	10,700 psi	

Load Notes: OSC= Overshot card

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

28 GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps)			Maximum Pressure	Load Notes
			Minimum		Maximum		
Remington: 3-Piece (Separate Black Plastic Base Wad)							
CCI 109	Blue Dot	Fed. 28S1			18.5/1200	10,100 psi	
CCI 109	Blue Dot	Rem. SP28			18.0/1200	7,500 psi	
CCI 109	Blue Dot	WAA28			18.0/1200	7,300 psi	
CCI 109	Herco	Fed. 28S1			14.5/1200	10,700 psi	
CCI 109	Herco	Rem. SP28			14.0/1200	8,900 psi	
CCI 109	Herco	WAA28			14.0/1200	8,300 psi	
CCI 109	Unique	Fed. 28S1			14.0/1200	10,900 psi	
CCI 109	Unique	Rem. SP28			13.0/1200	9,100 psi	
CCI 109	Unique	WAA28			13.0/1200	9,100 psi	
Rem. 209P	Blue Dot	Fed. 28S1			18.0/1200	9,200 psi	
Rem. 209P	Blue Dot	Rem. SP28	18.0/1200	19.5/1250	21.0/1295	9,700 psi	
Rem. 209P	Blue Dot	WAA28			18.0/1200	7,700 psi	
Rem. 209P	Herco	Fed. 28S1			14.5/1200	11,200 psi	
Rem. 209P	Herco	Rem. SP28	14.0/1200	15.3/1250	16.5/1295	10,300 psi	
Rem. 209P	Herco	WAA28			14.0/1200	8,800 psi	
Rem. 209P	Unique	Fed. 28S1			13.5/1200	11,300 psi	
Rem. 209P	Unique	Rem. SP28	13.0/1200	14.0/1250	15.0/1295	10,600 psi	
Rem. 209P	Unique	WAA28			13.0/1200	8,900 psi	
Rem. 209P	Universal	Rem. SP28			13.8/1200	11,600 psi	
Win. 209	Universal	Pat.Ctrl.28			13.7/1200	10,900 psi	
Remington: Premier & Nitro 27 & STS & Unibody (Integral Plastic Base Wad)							
CCI 209	Universal	Pat.Ctrl28			14.0/1200	10,000 psi	
Fed. 209A	IMR 800-X	CB 1034-28			13.0/1200	10,800 psi	
Fed. 209A	IMR 800-X	Fed. 28S1			13.0/1205	11,700 psi	
Fed. 209A	IMR 800-X	Pat.Ctrl28			13.0/1210	11,400 psi	
Fed. 209A	IMR 800-X	Rem. PT28			13.0/1205	11,400 psi	
Fed. 209A	IMR 800-X	WAA28			13.0/1195	11,000 psi	
Fed. 209A	IMR SR-4756	Fed. 28S1			14.0/1175	12,300 psi	
Fed. 209A	IMR SR-4756	Pat.Ctrl28			14.5/1200	12,200 psi	
Fed. 209A	IMR SR-4756	Rem. PT28			14.0/1185	12,500 psi	
Rem. 209	Solo 1250	Pat.Ctrl28	12.5/1155	13.0/1180	13.5/1200	11,900 psi	
Rem. 209P	IMR 800-X	CB 1034-28			13.5/1205	10300 psi	
Rem. 209P	IMR 800-X	Fed. 28S1			13.5/1215	11600 psi	
Rem. 209P	IMR 800-X	Pat.Ctrl28			13.0/1190	10,300 psi	
Rem. 209P	IMR 800-X	Rem. PT28			13.5/1205	10,700 psi	
Rem. 209P	IMR 800-X	WAA28			13.5/1205	10,300 psi	
Rem. 209P	IMR PB	Pat.Ctrl28			13.0/1175	12,100 psi	
Rem. 209P	IMR PB	Rem. PT28			13.0/1185	12,500 psi	
Rem. 209P	IMR PB	WAA28			13.5/1205	12,300 psi	
Rem. 209P	IMR SR-4756	Fed. 28S1			14.0/1140	10,300 psi	
Rem. 209P	IMR SR-4756	Pat.Ctrl28			15.0/1165	9,900 psi	
Rem. 209P	IMR SR-7625	Fed. 28S1			13.5/1185	12,400 psi	
Rem. 209P	IMR SR-7625	Pat.Ctrl28			14.0/1200	11,700 psi	
Rem. 209P	IMR SR-7625	Rem. PT28			13.5/1190	12,400 psi	
Rem. 209P	IMR SR-7625	WAA28			14.0/1205	11,800 psi	
Rem. 209P	Universal	Rem. PT28			14.3/1200	10,200 psi	
Rem. 209P	IMR 800-X	WAA28			13.5/1215	10,800 psi	
Win. 209	IMR 800-X	Rem. PT28			13.0/1195	11,300 psi	
Win. 209	IMR 800-X	CB 1034-28			13.0/1185	10,300 psi	

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28 GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum		Maximum	Maximum Pressure	Load Notes
Remington: Premier & Nitro 27 & STS & Unibody (Integral Plastic Base Wad)							
Win. 209	IMR 800-X	Fed. 28S1			13.5/1210	11,100 psi	
Win. 209	IMR 800-X	P R W			13.0/1185	10,400 psi	
Win. 209	IMR SR-4756	Fed. 28S1			14.0/1160	11,500 psi	
Win. 209	IMR SR-4756	P			15.0/1200	11,200 psi	
Win. 209	IMR SR-4756	Rem. PT28			14.0/1155	11,000 psi	
Win. 209	IMR SR-7625	P			14.0/1210	12,200 psi	
Win. 209	IMR SR-7625	Rem. PT28			14.0/1200	12,500 psi	
Win. 209	IMR SR-7625	WAA28			14.0/1210	12,200 psi	
Win. 209	Universal	Fed. 28S1			14.0/1200	11,400 psi	
Win. 209	Universal	WAA28			13.8/1200	10,600 psi	
Winchester: Compression-Formed AA Type							
CCI 109	Herco	WAA28			14.0/1200	7,900 psi	
CCI 109	Unique	WAA28			13.0/1200	8,400 psi	
CCI 109	W540	WAA28			17.5/1200	10,200 LUP	
CCI 109	W571	WAA28	19.0/1200	20.0/1230	21.0/1260	11,100 LUP	
Fed. 209	HS-6	WAA28			17.5/1200	10,300 LUP	
Fed. 209	IMR SR-7625	WAA28			12.0/1100	10,600 psi	
Fed. 209	W540	WAA28			17.5/1200	10,200 LUP	
Fed. 209A	IMR 800-X	CB 1034-28			12.5/1185	11,700 psi	
Fed. 209A	IMR 800-X	Fed. 28S1			12.0/1150	12,000 psi	
Fed. 209A	IMR 800-X	Pat.Ctrl.28			13.0/1210	12,300 psi	
Fed. 209A	IMR 800-X	WAA28			12.5/1185	11,600 psi	
Rem. 209P	HS-6	WAA28			17.5/1200	9,600 LUP	
Rem. 209P	IMR 800-X	CB 1034-28			13.5/1200	10,200 psi	
Rem. 209P	IMR 800-X	Fed. 28S1			13.5/1205	11,500 psi	
Rem. 209P	IMR 800-X	Pat.Ctrl.28			13.0/1200	11,400 psi	
Rem. 209P	IMR 800-X	WAA28			14.0/1200	9,700 psi	
Rem. 209P	IMR SR-4756	CB 1034-28			14.0/1165	12,000 psi	
Rem. 209P	IMR SR-4756	Pat.Ctrl.28			14.5/1185	12,200 psi	
Rem. 209P	IMR SR-4756	WAA28			14.0/1150	11,500 psi	
Rem. 209P	IMR SR-7625	CB 1034-28			14.0/1190	12,300 psi	
Rem. 209P	IMR SR-7625	Fed. 28S1			13.5/1170	12,400 psi	
Rem. 209P	IMR SR-7625	Pat.Ctrl.28			13.5/1170	12,000 psi	
Rem. 209P	IMR SR-7625	WAA28			14.0/1205	12,300 psi	
Rem. 209P	Universal	Rem. PT28			13.2/1200	11,900 psi	
Win. 209	Herco	WAA28			14.0/1200	8,400 psi	
Win. 209	HS-6	WAA28			17.5/1200	9,800 LUP	
Win. 209	HS-7	WAA28			19.0/1200	10,100 LUP	
Win. 209	IMR 800-X	CB 1034-28			13.0/1190	11,200 psi	
Win. 209	IMR 800-X	Fed. 28S1			12.5/1175	12,200 psi	
Win. 209	IMR 800-X	Pat.Ctrl.28			13.0/1205	12,000 psi	
Win. 209	IMR 800-X	WAA28			13.0/1195	11,400 psi	
Win. 209	Solo 1250	WAA28			13.0/1155	11,300 psi	
Win. 209	IMR SR-4756	CB 1034-28			14.0/1170	12,200 psi	
Win. 209	IMR SR-4756	Fed. 28S1			14.0/1155	12,500 psi	
Win. 209	IMR SR-4756	Pat.Ctrl.28			14.5/1190	12,000 psi	
Win. 209	IMR SR-4756	WAA28			14.0/1150	11,400 psi	
Win. 209	Unique	WAA28			13.0/1200	9,400 psi	
Win. 209	Universal	Pat.Ctrl.28			13.2/1200	11,900 psi	

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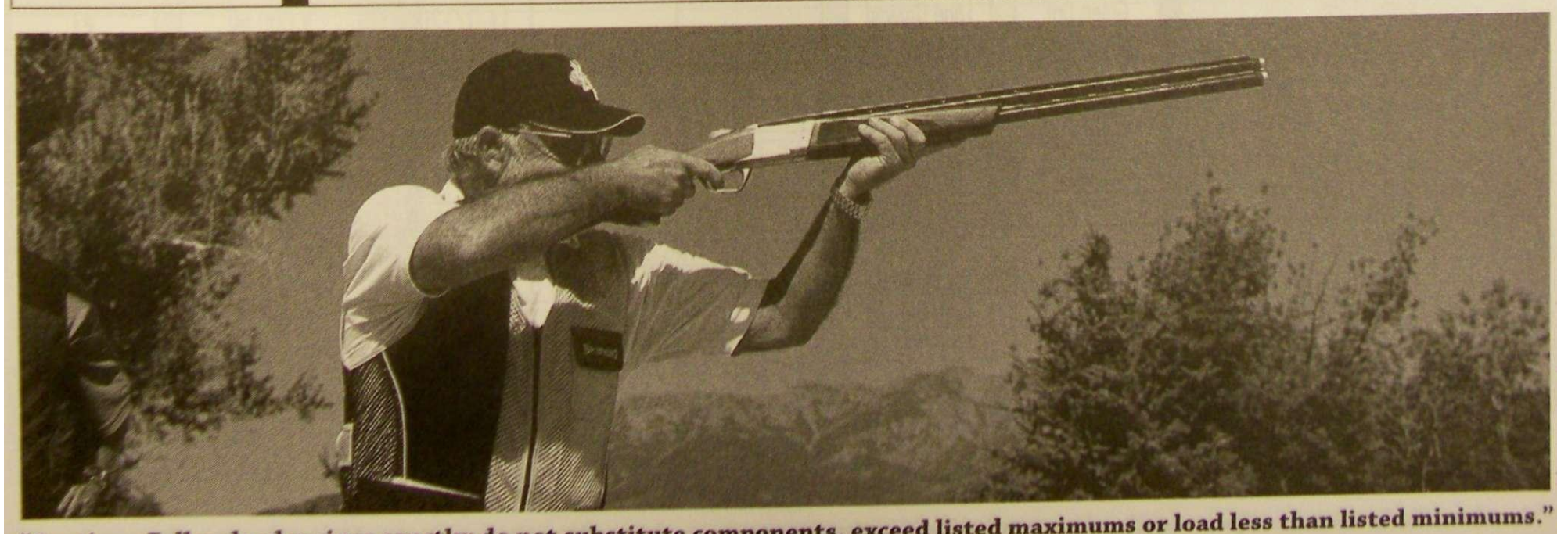
28 GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum		Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type							
Win. 209	Universal	WAA28			13.0/1200	10,800 psi	
Win. 209	W540	WAA28			17.5/1200	9,900 LUP	
Win. 209	W571	WAA28	19.0/1200	20.0/1230	21.0/1260	11,000 LUP	
Win. 209	Longshot	SG28-II			15.0/1325	12,100 psi	OSC
Win. AATP	W540	WAA28			16.5/1200	12,000 psi	#1
Win. AATP	W571	WAA28			18.0/1200	11,600 psi	
	Load Notes: OSC= Overshot card, #1 = This load duplicates ballistics of Winchester's AA target loading.						
2 3/4": 7/8 Ounce Lead Shot							
Ballistic Products: Multi-Hull 28 2A.1							
Ch. 209	HS-7	HV28			21.0/1225	12,000 psi	OSC
Ch. 209	Lil' Gun	HV28			28.0/1220	11,300 psi	OSC
Ch. 209	IMR 800-X	SG28-II			16.0/1270	12,330 psi	OSC
Ch. 209	HS-6	SG28-II			19.0/1225	12,000 psi	OSC
Ch. 209	Longshot	SG28-II			16.0/1300	12,400 psi	OSC
Federal: Plastic (Paper Base Wad)							
Rem. 209P	HS-7	Rem. PT28			19.5/1200	10,900 psi	
Win. 209	HS-7	Pat.Ctrl.28			19.2/1200	10,700 psi	
	Load Notes: OSC= Overshot card						
Fiocchi: Purple Target (High Base Wad)							
Rem. 209P	HS-7	Pat.Ctrl.28			19.0/1200	10,100 psi	
Win. 209	HS-7	Rem. PT28			19.5/1200	11,100 psi	
2 3/4": 1 Ounce Lead Shot							
Ballistic Products: Multi-Hull 28 2A.1							
CH209	HS-7	HV28			20.0/1245	12,500 psi	OSC
CH209	Lil' Gun	HV28			28.0/1200	12,200 psi	OSC
CH209	Lil' Gun	HV28			24.0/1165	10,900 psi	OSC
CH209	Lil' Gun	HV28			26.0/1180	11,350 psi	OSC
CH209	Steel	HV28			18.5/1265	12,450 psi	OSC, Roll Crip
CH209	Steel	HV28			19.5/1300	12,400 psi	OSC
	Load Notes: OSC/Roll Crimp= Overshot card, Roll Crimp.						



"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

Chapter 13

20-GAUGE LOAD DATA

2½" 20-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum		Maximum	Maximum Pressure	Load Notes
2 1/2": 3/4 Ounce Lead Shot							
Fiocchi: English Style							
Fio. 615	Unique	BP SG20L	15.0/1160	16.0/1210	17.0/1245	9,900 psi	Long wad
2 3/4": 3/4 Ounce Lead Shot							
Estate: Cheddite (Low Base Wad)							
Fio. 615	WSF	BP SG20S			18.0/1220	9,700 LUP	#4
Fio. 615	WSF	BP SG20L			18.0/1220	9,700 LUP	#5
Federal: Plastic (Paper Base Wad)							
Fed. 209	Green Dot	Fed. 20S1			15.0/1200	9,000 psi	#2
Fed. 209	Green Dot	Rem. RXP20			15.0/1200	8,600 psi	#2
Fed. 209	Green Dot	WAA20			15.0/1200	8,900 psi	#2
Fed. 209	Green Dot	Windjammer			15.5/1200	8,700 psi	#2
Fed. 209	Red Dot	Fed. 20S1			13.0/1200	10,100 psi	#3
Fed. 209	Unique	Fed. 20S1			15.0/1200	9,000 psi	#1
Fed. 209	Unique	Rem. RXP20			16.0/1200	8,600 psi	#1
Fed. 209	Unique	WAA20			16.0/1200	8,200 psi	#1
Fed. 209	Unique	Windjammer			17.0/1200	7,500 psi	#2
Fiocchi: Plastic							
Fio. 616	Unique	BP SG20S			16.0/1160	5,900 LUP	#4
Fio. 616	Unique	BP SG20L			16.0/1160	6,100 LUP	#5
Fio. 616	WSF	BP SG20S			18.0/1220	9,700 LUP	#4
Remington: Premier & Nitro 27 & STS							
Rem. 209P	Green Dot	Fed. 20S1			14.0/1200	10,000 psi	#1
Rem. 209P	Green Dot	H. Versalite			14.5/1200	10,000 psi	#1
Rem. 209P	Green Dot	Lage Uniwad			14.0/1200	9,800 psi	#1
Rem. 209P	Green Dot	Rem. RXP20			14.0/1200	10,000 psi	#1
Rem. 209P	Green Dot	WAA20			14.0/1200	10,500 psi	#1
Rem. 209P	Green Dot	Windjammer			14.0/1200	10,300 psi	#1
Rem. 209P	Red Dot	Fed. 20S1			13.0/1200	10,600 psi	#1
Rem. 209P	Unique	BP SG20S			15.9/1160	5,600 LUP	#4
Rem. 209P	Unique	BP SG20L			15.9/1160	5,600 LUP	#5
Rem. 209P	Unique	Fed. 20S1			15.5/1200	8,400 psi	#1
Rem. 209P	Unique	H. Versalite			16.0/1200	8,9000 psi	#1
Rem. 209P	Unique	Lage Uniwad			15.5/1200	8,600 psi	#1
Rem. 209P	Unique	Rem. RXP20			15.5/1200	8,700 psi	#1
Rem. 209P	Unique	WAA20			15.5/1200	8,900 psi	#1
Rem. 209P	Unique	Windjammer			15.5/1200	8,900 psi	#1

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

2½" 20-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum		Maximum	Maximum Pressure	Load Notes
Remington RXP							
Rem. 97*	Green Dot	Fed. 20S1			13.5/1200	11,100 psi	
Rem. 97*	Green Dot	Rem. RXP20			13.5/1200	10,400 psi	
Rem. 97*	Green Dot	WAA20			13.5/1200	10,400 psi	
Rem. 97*	Unique	Fed. 20S1			13.5/1200	9,900 psi	
Rem. 97*	Unique	Rem. RXP20			15.5/1200	9,900 psi	
Rem. 97*	Unique	WAA20			15.0/1200	9,400 psi	
Winchester: Compression-Formed AA Type							
Fio. 615	Unique	BP SG20S			16.0/1160	5,600 LUP	#6
Fio. 615	Unique	BP SG20L			16.0/1160	5,400 LUP	#5
Win. 209	Green Dot	Fed. 20S1			14.0/1200	9,900 psi	#2
Win. 209	Green Dot	Rem. RXP20			14.0/1200	10,200 psi	#2
Win. 209	Green Dot	WAA20			14.0/1200	10,800 psi	#2
Win. 209	Solo 1250	BP SG20L			16.5/1200	10,600 LUP	#5
Win. 209	Unique	Fed. 20S1			15.5/1200	9,700 psi	
Win. 209	Unique	Rem. RXP20			15.5/1200	9,900 psi	#2
Win. 209	Unique	WAA20			15.5/1200	9,100 psi	#2
Win. 209	W452AA	WAA20		14.0/1145	15.0/1200	10,600 LUP	#7
Win. 209	W473AA	Rem. RXP20		16.0/1145	17.0/1200	9,300 LUP	#7

Load Notes: #1 = Add two 28-gauge, 0.135» cards inside bottom of shotcup. #2 = Add one 28-gauge, 0.135» card inside bottom of shotcup. #3 = Add three 28-gauge, 0.135» cards inside bottom of shotcup. #4 = Add one 20-gauge, 0.100» nitro card over powder. #5 = Long wad. #6 = Place one 20-gauge, 0.100» nitro card over powder. #7 = Add one 410-bore, 0.135» card inside bottom of shotcup.

2¾" 20-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum		Maximum	Maximum Pressure	Load Notes
2 3/4": 7/8 Ounce Lead Shot							
Ballistic Products: Mult-Hull 20 2A.1							
Ch. 209	HS-6	BW20			24.0/1345	10,100 psi	OSC
Ch. 209	Longshot	BW20			24.0/1475	10,300 psi	OSC
Ch. 209	HS-6	Z20			24.0/1310	9,600 psi	OSC
Estate: Cheddite (Low Base Wad)							
Fio. 615	WSF	BP SG20L			17.0/1200	10,500 LUP	#2
Federal: Paper							
CCI 109	Green Dot	Fed. 20S1	14.5/1155	14.8/1180	15.0/1200	9,000 psi	
CCI 109	Green Dot	Rem. RXP20	15.0/1155	15.5/1180	16.0/1200	9,900 psi	
CCI 109	Green Dot	WAA20	14.5/1155	15.0/1180	15.5/1200	8,800 psi	
CCI 109	Unique	Fed. 20S1			17.0/1200	8,400 psi	
CCI 109	Unique	Rem. RXP20	15.0/1155	16.0/1180	17.0/1200	8,500 psi	
CCI 109	Unique	WAA20			17.0/1200	8,500 psi	
CCI 209M	Green Dot	Fed. 20S1	14.5/1155	14.8/1180	15.0/1200	10,500 psi	
CCI 209M	Herco	Fed. 20S1			17.0/1200	9,600 psi	
CCI 209M	Unique	Fed. 20S1	16.0/1155	16.5/1180	17.0/1200	9,900 psi	
Fed. 209	Green Dot	Fed. 20S1	14.0/1155	14.5/1180	15.0/1200	9,600 psi	
Fed. 209	Green Dot	Rem. RXP20	14.5/1155	15.0/1180	15.5/1200	10,900 psi	
Fed. 209	Green Dot	WAA20	14.5/1155	14.8/1180	15.0/1200	9,700 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

2¾" 20-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum		Maximum	Maximum Pressure	Load Notes
Federal: Paper							
Fed. 209	Unique	Fed. 20S1	14.5/1155	15.0/1180	15.5/1200	9,400 psi	
Fed. 209	Unique	Rem. RXP20	15.5/1155	16.0/1180	16.5/1200	9,800 psi	
Fed. 209	Unique	WAA20	15.0/1155	15.5/1180	16.0/1200	9,200 psi	
Federal: Plastic (Paper Base Wad)							
CCI 109	Green Dot	Fed. 20S1	14.5/1155	15.0/1180	15.5/1200	9,400 psi	
CCI 109	Green Dot	Lage Uniwad	15.5/1155	15.8/1180	16.0/1200	10,000 psi	
CCI 109	Green Dot	Rem. RXP20			16.0/1200	9,600 psi	
CCI 109	Green Dot	WAA20	14.5/1155	15.0/1180	15.5/1200	9,100 psi	
CCI 109	Herco	Fed. 20S1			17.0/1200	9,300 psi	
CCI 109	Herco	Rem. RXP20			18.0/1200	8,800 psi	
CCI 109	Herco	WAA20			17.0/1200	9,100 psi	
CCI 109	Unique	Fed. 20S1			17.0/1200	8,500 psi	
CCI 109	Unique	Lage Uniwad	17.0/1155	17.5/1180	17.0/1200	8,800 psi	
CCI 109	Unique	Rem. RXP20	16.0/1155	16.5/1180	17.0/1200	9,200 psi	
CCI 109	Unique	WAA20			17.0/1200	8,500 psi	
CCI 209	Green Dot	Fed. 20S1	14.5/1155	15.5/1180	17.0/1200	9,300 psi	
CCI 209	Herco	Fed. 20S1			17.5/1200	7,600 psi	
CCI 209	Solo 1250	BP SG20S	18.2/1150	18.5/1175	18.8/1200	10,000 LUP	#3
CCI 209	Solo 1250	Fed. 20S1	18.5/1155	19.0/1180	19.5/1200	10,400 psi	#1
CCI 209	Unique	Fed. 20S1	16.0/1155	16.5/1180	17.0/1200	9,100 psi	
Fed. 209	Green Dot	Fed. 20S1			16.5/1200	10,600 psi	
Fed. 209	Green Dot	H. Versalite	15.5/1155	15.8/1180	16.0/1200	10,500 psi	
Fed. 209	Green Dot	Lage Uniwad	16.0/1155	16.3/1180	16.5/1200	11,000 psi	
Fed. 209	Green Dot	WAA20			14.5/1155	9,700 psi	
Fed. 209	Green Dot	Windjammer	15.0/1155	15.5/1180	16.0/1200	10,900 psi	
Fed. 209	Herco	Windjammer			18.5/1200	10,200 psi	
Fed. 209	International	H. Versalite			15.7/1200	9,100 psi	
Fed. 209	Solo 1250	Fed. 20S1	18.0/1155	18.5/1180	19.0/1200	9,900 psi	#1
Fed. 209	Solo 1250	Pat.Ctrl.20	18.5/1155	19.0/1180	19.5/1200	10,100 psi	#1
Fed. 209	Solo 1250	Rem. RXP20	18.5/1155	19.0/1180	19.5/1200	10,400 psi	#1
Fed. 209	Solo 1250	Windjammer			18.0/1155	9,100 psi	#1
Fed. 209	Unique	Windjammer	16.5/1155	16.8/1180	17.0/1200	10,600 psi	
Fed. 209	Universal	H. Versalite			17.5/1200	7,900 psi	
Fed. 209A	Green Dot	Pat.Ctrl.20			16.0/1200	11,200 psi	
Fed. 209A	Herco	Pat.Ctrl.20			18.0/1200	9,200 psi	
Fed. 209A	IMR 800-X	CB 1078-20			17.0/1190	7,800 psi	
Fed. 209A	IMR 800-X	Fed. 20S1			17.0/1190	8,200 psi	
Fed. 209A	IMR 800-X	Rem. RXP20			17.5/1200	7,600 psi	
Fed. 209A	IMR 800-X	WAA20			17.5/1200	8,000 psi	
Fed. 209A	IMR 800-X	Windjammer			17.5/1200	8,000 psi	
Fed. 209A	IMR PB	CB 1078-20			17.0/1190	9,800 psi	
Fed. 209A	IMR PB	Fed. 20S1			17.5/1200	10,000 psi	
Fed. 209A	IMR PB	Rem. RXP20			17.5/1200	9,300 psi	
Fed. 209A	IMR PB	WAA20			17.5/1200	9,400 psi	
Fed. 209A	IMR PB	Windjammer			17.5/1200	9,500 psi	
Fed. 209A	International	H. Versalite			15.7/1200	10,900 psi	
Fed. 209A	IMR SR 4756	Fed. 20S1			20.5/1210	8,700 psi	
Fed. 209A	IMR SR 4756	Rem. RXP20			21.0/1200	7,800 psi	
Fed. 209A	IMR SR 4756	WAA20			20.5/1205	8,500 psi	
Fed. 209A	IMR SR 4756	Windjammer			20.5/1205	9,700 psi	
Fed. 209A	IMR SR-7625	CB 1078-20			18.5/1210	9,500 psi	
Fed. 209A	IMR SR-7625	Fed. 20S1			18.5/1210	8,700 psi	
Fed. 209A	IMR SR-7625	Rem. RXP20			19.0/1210	8,700 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

2¾" 20-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum		Maximum	Maximum Pressure	Load Notes
Federal: Plastic (Paper Base Wad)							
Fed. 209A	IMR SR-7625	WAA20			18.5/1210	9,200 psi	
Fed. 209A	IMR SR-7625	Windjammer			18.5/1190	8,600 psi	
Fed. 209A	Unique	Pat.Ctrl.20			18.0/1200	9,800 psi	
Fed. 209A	Universal	H. Versalite			17.5/1200	9,300 psi	
Fio. 616	International	BP SG20S			15.6/1200	10,600 psi	#3
Rem. 209P	IMR 800-X	17.5/1205			17.5/1205	7,900 psi	
Rem. 209P	IMR 800-X	17.5/1195			17.5/1195	7,900 psi	
Rem. 209P	IMR 800-X	18.0/1210			18.0/1210	7,600 psi	
Rem. 209P	IMR 800-X	WAA20			17.5/1200	7,600 psi	
Rem. 209P	IMR 800-X	Windjammer			17.0/1195	7,300 psi	
Rem. 209P	IMR PB	CB 1078-20			17.5/1200	9,300 psi	
Rem. 209P	IMR PB	Fed. 20S1			17.5/1200	9,400 psi	
Rem. 209P	IMR PB	Rem. RXP20			17.5/1200	8,900 psi	
Rem. 209P	IMR PB	WAA20			17.5/1200	9,300 psi	
Rem. 209P	IMR PB	Windjammer			18.0/1210	9,500 psi	
Rem. 209P	IMR SR-4756	Fed. 20S1			21.5/1205	7,600 psi	
Rem. 209P	IMR SR-4756	Rem. RXP20			21.5/1180	7,000 psi	
Rem. 209P	IMR SR-4756	WAA20			21.5/1200	7,900 psi	
Rem. 209P	IMR SR-4756	Windjammer			21.5/1200	7,900 psi	
Rem. 209P	IMR SR-7625	CB 1078-20			18.5/1195	8,600 psi	
Rem. 209P	IMR SR-7625	Fed. 20S1			19.0/1200	8,300 psi	
Rem. 209P	IMR SR-7625	Rem. RXP20			19.5/1205	8,300 psi	
Rem. 209P	IMR SR-7625	WAA20			18.5/1195	8,500 psi	
Rem. 209P	IMR SR-7625	Windjammer			19.0/1200	8,300 psi	
Win. 209	Green Dot	BP SG20S			14.5/1150	10,000 LUP	#3
Win. 209	IMR 800-X	CB 1078-20			17.0/1195	8,100 psi	
Win. 209	IMR 800-X	Fed. 20S1			17.5/1200	8,300 psi	
Win. 209	IMR 800-X	Rem. RXP20			17.5/1200	8,000 psi	
Win. 209	IMR 800-X	WAA20			17.5/1200	8,100 psi	
Win. 209	IMR 800-X	Windjammer			17.5/1200	8,000 psi	
Win. 209	IMR PB	CB 1078-20			17.5/1200	9,500 psi	
Win. 209	IMR PB	Fed. 20S1			17.5/1200	10,100 psi	
Win. 209	IMR PB	Rem. RXP20			18.0/1195	9,000 psi	
Win. 209	IMR PB	WAA20			17.5/1200	9,400 psi	
Win. 209	IMRPB	Windjammer			17.5/1200	9,500 psi	
Win. 209	International	BP SG20L			16.0/1200	1,400 LUP	#2
Win. 209	International	WAA20			15.5/1200	9,400 psi	
Win. 209	Solo 1250	Fed. 20S1	18.0/1155	18.5/1180	19.0/1200	10,500 psi	#1
Win. 209	IMR SR-4756	Fed. 20S1			20.5/1205	8,500 psi	
Win. 209	IMR SR-4756	Rem. RXP20			21.0/1205	7,900 psi	
Win. 209	IMR SR-4756	WAA20			20.5/1195	8,200 psi	
Win. 209	IMR SR-4756	Windjammer			20.5/1195	8,300 psi	
Win. 209	IMR SR-7625	CB 1078-20			18.5/1210	9,000 psi	
Win. 209	IMR SR-7625	Fed. 20S1			18.5/1195	8,600 psi	
Win. 209	IMR SR-7625	Rem. RXP20			18.5/1195	8,500 psi	
Win. 209	IMR SR-7625	WAA20			18.5/1195	8,400 psi	
Win. 209	IMR SR-7625	Windjammer			19.0/1200	9,100 psi	
Win. 209	Universal	WAA20			17.5/1200	8,000 psi	
CCI 209	International	Rem. RXP20			16.0/1200	9,400 psi	
CCI 209	Universal	Fed. 20S1			18.2/1200	8,200 psi	
CCI 209	Universal	Rem. RXP20			19.0/1200	7,000 psi	
CCI 209M	Green Dot	Fed. 20S1	14.5/1155	15.0/1180	15.5/1200	10,700 psi	
CCI 209M	Herco	Fed. 20S1			17.0/1200	9,900 psi	
CCI 209M	Unique	Fed. 20S1	16.0/1155	16.5/1180	17.0/1200	10,000 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

2¾" 20-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum		Maximum	Maximum Pressure	Load Notes
Federal: Plastic (Paper Base Wad)							
Fed. 209	Green Dot	Fed. 20S1	14.5/1155	15.0/1180	15.5/1200	11,100 psi	
Fed. 209	Herco	Fed. 20S1			17.5/1200	10,200 psi	
Fed. 209	Unique	Fed. 20S1	15.5/1155	16.3/1180	17.0/1200	10,800 psi	
Fio. 615	Green Dot	Fed. 20S1	15.0/1155	15.5/1180	16.0/1200	10,900 psi	
Fio. 615	Green Dot	H. Versalite	15.5/1155	15.8/1180	16.0/1200	10,000 psi	
Fio. 615	Green Dot	Lage Uniwad	15.5/1155	16.5/1180	17.5/1200	8,200 psi	
Fio. 615	Green Dot	Rem. RXP20			16.5/1200	10,300 psi	
Fio. 615	Green Dot	WAA20			16.0/1200	10,800 psi	
Fio. 615	Herco	Fed. 20S1			18.0/1200	9,200 psi	
Fio. 615	Herco	H. Versalite			19.0/1200	8,300 psi	
Fio. 615	Herco	Rem. RXP20			19.0/1200	8,500 psi	
Fio. 615	Herco	WAA20			18.5/1200	8,700 psi	
Fio. 615	Unique	Fed. 20S1	17.0/1155	17.5/1180	18.0/1200	9,700 psi	
Fio. 615	Unique	H. Versalite			18.0/1155	8,300 psi	
Fio. 615	Unique	Lage Uniwad	17.5/1155	18.3/1180	19.0/1200	8,000 psi	
Fio. 615	Unique	WAA20			17.5/1200	9,600 psi	
Fio. 616	Green Dot	Fed. 20S1	14.5/1155	15.0/1180	15.5/1200	10,600 psi	
Fio. 616	Herco	Fed. 20S1			18.0/1200	9,200 psi	
Fio. 616	International	BP SG20S			15.6/1200	10,600 psi	#3
Fio. 616	Solo 1250	BP SG20S	18.1/1170	18.4/1185	18.8/1200	10,000 LUP	#3
Fio. 616	Unique	BP Z20	16.0/1160	16.5/1190	17.0/1220	11,100 psi	#4
Fio. 616	Unique	BP Z20	16.0/1160	16.5/1190	17.0/1220	11,100 psi	#4
Fio. 616	Unique	Fed. 20S1	16.0/1160	16.8/1180	17.5/1200	10,000 psi	
Rem. 209	Green Dot	Fed. 20S1	14.5/155	15.0/1180	15.5/1200	10,800 psi	
Rem. 209	Herco	Fed. 20S1			16.5/1200	9,900 psi	
Rem. 209	Unique	Fed. 20S1			16.0/1155	9,400 psi	
Rem. 209P	Unique	BP Z20			16.0/1190	11,300 psi	
Win. 209	Green Dot	Fed. 20S1	14.5/1155	15.3/1180	16.0/1200	10,400 psi	
Win. 209	Herco	Fed. 20S1			18.0/1200	9,900 psi	
Win. 209	International	WAA20			15.3/1200	11,100 psi	
Win. 209	International	Windjammer			14.8/1200	10,400 psi	
Win. 209	Unique	Fed. 20S1	16.5/1155	16.8/1180	17.0/1200	10,100 psi	
Win. 209	Universal	WAA20			18.5/1200	8,200 psi	
Remington: Premier & Nitro 27 & STS							
CCI 209	Green Dot	Rem. RXP20			14.5/1155	10,900 psi	
CCI 209	Herco	Rem. RXP20	16.5/1155	17.0/1180	17.5/1200	9,400 psi	
CCI 209	Unique	Rem. RXP20	16.0/1155	16.3/1180	16.5/1200	9,900 psi	
CCI 209M	Herco	Rem. RXP20	16.5/1155	16.8/1180	17.0/1200	10,800 psi	
CCI 209M	Unique	Rem. RXP20	15.5/1155	15.8/1180	16.0/1200	11,300 psi	
Fed. 209	Herco	Rem. RXP20	16.5/1155	16.8/1180	17.0/1200	11,000 psi	
Fed. 209	Unique	Rem. RXP20	15.5/1155	16.0/1180	16.5/1200	11,300 psi	
Fed. 209A	IMR 800-X	CB 1078-20			16.0/1215	9,900 psi	
Fed. 209A	IMR 800-X	Fed. 20S1			16.0/1210	11,300 psi	
Fed. 209A	IMR 800-X	Rem. RXP20			16.0/1190	9,100 psi	
Fed. 209A	IMR 800-X	WAA20			16.0/1195	9,300 psi	
Fed. 209A	IMR 800-X	Windjammer			16.0/1200	9,500 psi	
Fed. 209A	IMR PB	Fed. 20S1			15.0/1160	11,900 psi	
Fed. 209A	IMR PB	Rem. RXP20			16.0/1195	11,600 psi	
Fed. 209A	IMR PB	WAA20			16.0/1210	11,900 psi	
Fed. 209A	IMR PB	Windjammer			15.5/1185	11,900 psi	
Fed. 209A	IMR SR-4756	Rem. RXP20			17.5/1195	10,600 psi	
Fed. 209A	IMR SR-4756	WAA20F1			17.5/1190	10,200 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums

2¾" 20-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum		Maximum	Maximum Pressure	Load Notes
Remington: Premier & Nitro 27 & STS							
Fed. 209A	IMR SR-7625	CB 1078-20			16.5/1195	11,400 psi	
Fed. 209A	IMR SR-7625	Fed. 20S1			16.5/1190	12,000 psi	
Fed. 209A	IMR SR-7625	Rem. RXP20			17.0/1210	11,000 psi	
Fed. 209A	IMR SR-7625	WAA20			16.5/1205	12,000 psi	
Fed. 209A	IMR SR-7625	Windjammer			16.5/1200	11,400 psi	
Fio. 616	Herco	Rem. RXP20	16.5/1166	16.8/1180	17.0/1200	10,700 psi	
Fio. 616	Unique	Rem. RXP20	16.0/1155	16.3/1180	16.5/1200	11,200 psi	
Rem. 209	Solo 1250	BP SG20S			15.1/1150	10,100 LUP	#3
Rem. 209P	Green Dot	BP SG20S			13.9/1150	10,300 LUP	#3
Rem. 209P	Green Dot	H. Versalite			14.0/1155	11,500 psi	
Rem. 209P	Green Dot	Lage Uniwad			14.0/1155	11,400 psi	
Rem. 209P	Green Dot	Pat.Ctrl.20			14.5/1200	11,200 psi	
Rem. 209P	Green Dot	Rem. RXP20			14.5/1155	11,500 psi	
Rem. 209P	Green Dot	WAA20			14.0/1155	11,100 psi	
Rem. 209P	Green Dot	Windjammer			14.0/1155	11,200 psi	
Rem. 209P	Herco	Fed. 20S1	16.0/1155	16.5/1180	17.0/1200	10,500 psi	
Rem. 209P	Herco	H. Versalite	16.0/1155	16.8/1180	17.5/1200	10,400 psi	
Rem. 209P	Herco	Lage Uniwad	16.0/1155	16.8/1180	17.5/1200	10,300 psi	
Rem. 209P	Herco	Pat.Ctrl.20			17.5/1200	10,200 psi	
Rem. 209P	Herco	Rem. RXP20	16.5/1155	16.8/1180	17.0/1200	10,600 psi	
Rem. 209P	Herco	WAA20	16.0/1155	16.5/1180	17.0/1200	10,700 psi	
Rem. 209P	Herco	Windjammer	16.0/1155	16.5/1180	17.0/1200	10,100 psi	
Rem. 209P	IMR 800-X	CB 1078-20			16.0/1205	9,500 psi	
Rem. 209P	IMR 800-X	Fed. 20S1			16.0/1195	9,600 psi	
Rem. 209P	IMR 800-X	Rem. RXP20			16.5/1200	9,100 psi	
Rem. 209P	IMR 800-X	WAA 20			16.5/1205	9,100 psi	
Rem. 209P	IMR 800-X	Windjammer			16.5/1210	9,500 psi	
Rem. 209P	IMR PB	CB 1078-20			16.0/1195	11,800 psi	
Rem. 209P	IMR PB	Fed. 20S1			15.5/1185	11,800 psi	
Rem. 209P	IMR PB	Rem. RXP20			16.0/1195	11,000 psi	
Rem. 209P	IMR PB	WAA20F1			16.0/1195	11,400 psi	
Rem. 209P	IMR PB	Windjammer			16.0/1210	11,700 psi	
Rem. 209P	Solo 1250	BP SG20S	15.1/1150	15.6/1175	16.1/1200	10,700 LUP	#3
Rem. 209P	IMR SR-4756	Rem. RXP20			18.5/1205	10,200 psi	
Rem. 209P	IMR SR-4756	WAA20F1			18.5/1195	9,500 psi	
Rem. 209P	IMR SR-7625	CB 1078-20			17.0/1205	11,000 psi	
Rem. 209P	IMR SR-7625	Fed. 20S1			17.0/1195	11,100 psi	
Rem. 209P	IMR SR-7625	Rem. RXP20			17.0/1190	10,100 psi	
Rem. 209P	IMR SR-7625	WAA20			17.0/1205	11,000 psi	
Rem. 209P	IMR SR-7625	Windjammer			17.0/1210	11,000 psi	
Rem. 209P	Unique	Fed. 20S1	15.5/1155	16.0/1180	16.5/1200	10,800 psi	
Rem. 209P	Unique	H. Versalite	15.5/1155	16.0/1180	16.5/1200	10,200 psi	
Rem. 209P	Unique	Lage Uniwad	15.5/1155	16.0/1180	16.5/1200	10,400 psi	
Rem. 209P	Unique	Pat.Ctrl.20			17.0/1200	10,500 psi	
Rem. 209P	Unique	Rem. RXP20	15.5/1155	16.0/1180	16.5/1200	10,700 psi	
Rem. 209P	Unique	WAA20	15.5/1155	16.0/1180	16.5/1200	10,900 psi	
Rem. 209P	Unique	Windjammer	15.5/1155	15.8/1180	16.0/1200	10,400 psi	
Win.209	Herco	Rem. RXP20	16.5/1155	16.8/1180	17.0/1200	10,600 psi	
Win.209	IMR 800-X	CB 1078-20			16.0/1205	9,600 psi	
Win.209	IMR 800-X	Fed. 20S1			16.0/1200	9,600 psi	
Win.209	IMR 800-X	Rem. RXP20			16.5/1210	9,500 psi	
Win.209	IMR 800-X	WAA20			16.0/1190	9,300 psi	
Win.209	IMR 800-X	Windjammer			16.0/1190	9,500 psi	

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2¾" 20-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum		Maximum	Maximum Pressure	Load Notes
Remington: Premier & Nitro 27 & STS							
Win.209	IMR PB	CB 1078-20			16.0/1195	11,700 psi	
Win.209	IMR PB	Rem. RXP20			16.0/1190	11,100 psi	
Win.209	IMR PB	WAA20F1			16.0/1190	11,100 psi	
Win.209	IMR PB	Windjammer			16.0/1200	11,700 psi	
Win.209	Red Dot	BP SG20S			11.5/1155	11,000 LUP	#3
Win.209	Solo 1250	BP SG20S			16.0/1200	10,600 LUP	#3
Win.209	IMR SR-4756	Rem. SP20			18.5/1205	10,300 psi	
Win.209	IMR SR-4756	WAA20F1			19.0/1205	9,600 psi	
Win.209	IMR SR-7625	CB 1078-20			17.0/1205	11,100 psi	
Win.209	IMR SR-7625	Fed. 20S1			17.0/1210	11,800 psi	
Win.209	IMR SR-7625	Rem. RXP20			17.0/1195	10,300 psi	
Win.209	IMR SR-7625	WAA20			17.0/1200	10,900 psi	
Win.209	IMR SR-7625	Windjammer			17.0/1200	10,800 psi	
Win.209	Unique	BP SG20S			16.8/1220	10,100 LUP	#3
Win.209	Unique	Rem. RXP20	15.5/1155	16.0/1180	16.5/1200	11,300 psi	
Remington: Premier & RXP							
CCI 209	International	H. Versalite			14.0/1200	11,400 psi	
CCI 209	Universal	H. Versalite			15.8/1200	9,900 psi	
Fed. 209	International	Windjammer			14.0/1200	11,800 psi	
Fed. 209	Universal	Windjammer			15.8/1200	9,600 psi	
Fed. 209A	International	BP SG20S			15.5/1200	11,200 psi	#3
Fed. 209A	Universal	Windjammer			16.0/1200	10,600 psi	
Rem. 209P	International	Rem. RXP20			14.0/1200	10,700 psi	
Rem. 209P	Universal	Rem. RXP20			15.8/1200	9,000 psi	
Win. 209	International	Pat.Ctrl.20			14.0/1200	11,000 psi	
Win. 209	International	WAA20			14.0/1200	11,900 psi	
Win. 209	Universal	Pat.Ctrl.20			15.8/1200	9,200 psi	
Win. 209	Universal	WAA20			15.8/1200	9,600 psi	
Win. AATP	Universal	WAA20			16.2/1200	10,900 psi	
Remington: RXP							
CCI 109	Green Dot	Fed. 20S1			13.5/1155	11,100 psi	
CCI 109	Green Dot	Lage Uniwad	14.5/1155	15.0/1180	15.5/1200	11,400 psi	
CCI 109	Green Dot	Rem. RXP20	14.0/1155	14.3/1180	14.5/1200	10,900 psi	
CCI 109	Green Dot	WAA20			14.0/1155	10,700 psi	
CCI 109	Herco	Fed. 20S1			17.0/1200	11,300 psi	
CCI 109	Herco	Rem. RXP20			17.0/1200	9,900 psi	
CCI 109	Herco	WAA20			16.5/1200	10,400 psi	
CCI 109	Unique	Fed. 20S1			16.0/1200	10,500 psi	
CCI 109	Unique	Lage Uniwad	15.5/1155	16.0/1180	16.5/1200	10,400 psi	
CCI 109	Unique	WAA20			16.0/1200	10,800 psi	
CCI 209	WSF	Fed. 20S1			17.5/1200	11,100 psi	
CCI 209	WSF	Rem. RXP20			17.5/1200	9,700 psi	
CCI 209	WSF	WAA20			17.0/1200	10,500 psi	
CCI 209M	Herco	Rem. RXP20			16.5/1200	10,700 psi	
CCI 209M	Unique	Rem. RXP20			16.0/1200	10,500 psi	
Fed. 209	Solo 1250	Rem. RXP20			17.0/1200	11,400 psi	#5
Fed. 209	WSF	Fed. 20S1			17.0/1200	10,800 psi	
Fed. 209	WSF	Rem. RXP20			17.5/1200	10,300 psi	
Fed. 209	WSF	WAA20			17.0/1200	10,700 psi	
Rem. 209P	Solo 1250	Rem. RXP20	16.0/1155	16.5/1180	17.0/1200	11,200 psi	#5
Rem. 209P	Solo 1250	Rem. SP20			16.0/1155	10,000 psi	#5

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2¾" 20-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum		Maximum	Maximum Pressure	Load Notes
Remington: RXP							
Rem. 209P	Solo 1250	WAA20			16.0/1155	10,800 psi	#5
Rem. 209P	Solo 1250	Windjammer			16.0/1155	10,400 psi	#5
Rem. 209P	Unique	BP Z20			16.0/1190	11,270 psi	#4
Rem. 209P	Unique	BP Z20			16.0/1190	11,270 psi	#4
Rem. 97*	Green Dot	Fed. 20S1			13.0/1545	11,500 psi	
Rem. 97*	Green Dot	Rem. RXP20			14.0/1155	11,300 psi	
Rem. 97*	Green Dot	WAA20			13.5/1155	11,400 psi	
Rem. 97*	Herco	Rem. RXP20			17.0/1200	10,600 psi	
Rem. 97*	Herco	WAA20			17.0/1200	10600 psi	
Rem. 97*	Unique	Fed. 20S1			16.0/1200	10,500 psi	
Rem. 97*	Unique	Lage Uniwad	15.5/1155	15.8/1180	16.0/1200	10,900 psi	
Rem. 97*	Unique	Rem. RXP20			16.0/1200	9,700 psi	
Rem. 97*	Unique	WAA20			16.0/1200	10,700 psi	
Win. 209	Solo 1250	Rem. RXP20			17.0/1200	11,400 psi	#5
Win. 209	W473AA	Rem. RXP20			17.5/1200	10,800 LUP	
Win. 209	W540	WAA20			20.5/1200	9,700 LUP	
Win. 209	WSF	Fed. 20S1			17.0/1200	11,300 psi	
Win. 209	WSF	Rem. RXP20			17.5/1200	10,600 psi	
Win. 209	WSF	WAA20			17.0/1200	10,500 psi	
Remington: SP (Separate Plastic Base Wad)							
CCI 209M	IMR 800-X	WAA20			17.0/1205	9,000 LUP	
Rem. 209	Unique	Rem. RXP20			16.5/1200	9,100 psi	
Rem. 209	Unique	WAA20			16.5/1200	9,800 psi	
Remington: Unibody (Integral Plastic Base Wad)							
CCI 209M	Herco	Rem. RXP20			17.5/1200	11,300 psi	
CCI 209M	Unique	Rem. RXP20			16.5/1200	10,900 psi	
Fed. 209	Herco	Rem. RXP20			16.5/1200	10,700 psi	
Fed. 209	Unique	Rem. RXP20			16.0/1200	11,500 psi	
Rem. 209	Herco	H. Versalite			16.5/1200	10,900 psi	
Rem. 209	Herco	Rem. RXP20			16.5/1200	10,200 psi	
Rem. 209	Unique	Rem. RXP20			16.5/1200	10,800 psi	
Rem. 209	Unique	WAA20			16.5/1200	11,200 psi	
Win. 209	Herco	Rem. RXP20			17.5/1200	10,900 psi	
Remington: RXP & Unibody							
Rem. 209P	Unique	Z20			16.0/1200	11,300 psi	OSC
Rem. 209P	Longshot	BW20			23.0/1340	11,900 psi	OSC
Winchester: Compression-Formed AA Type (old)							
CCI 209	IMR SR-4756	SG20S			22.0/1365	11,500 psi	OSC
Win. 209	IMR 800-X	SG20S			19.5/1395	11,700 psi	OSC
Win. 209	HS-6	SG20S			21.0/1305	11,600 psi	OSC
Win. 209	HS-6	BW20			22.0/1355	10,400 psi	OSC
Winchester: Compression-Formed AA Type							
CCI 109	Green Dot	Fed. 20S1	14.0/1155	14.3/1180	14.5/1200	10,500 psi	
CCI 109	Green Dot	Rem. RXP20	14.5/1155	14.8/1180	15.0/1200	10,000 psi	
CCI 109	Green Dot	WAA20	14.0/1155	14.3/1180	14.5/1200	10,300 psi	

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2¾" 20-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum		Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type							
CCI 109	Herco	Fed. 20S1			16.5/1200	10,200 psi	
CCI 109	Herco	Rem. RXP20			16.5/1200	8,800 psi	
CCI 109	Herco	WAA20			16.5/1200	10,200 psi	
CCI 109	Unique	Fed. 20S1	15.5/1155	15.8/1180	16.0/1200	10,000 psi	
CCI 109	Unique	Lage Uniwad	16.0/1155	16.3/1180	16.5/1200	10,800 psi	
CCI 109	Unique	Rem. RXP20	15.5/1155	15.8/1180	16.0/1200	9,900 psi	
CCI 109	Unique	WAA20	15.5/1155	15.8/1180	16.0/1200	10,700 psi	
CCI 109	W473AA	WAA20			17.5/1200	10,900 LUP	
CCI 209	International	H. Versalite			14.0/1200	11,000 psi	
CCI 209	Universal	H. Versalite			15.8/1200	10,400 psi	
CCI 209	WSF	Fed. 20S1			16.5/1200	11,400 psi	
CCI 209	WSF	Rem. RXP20			17.5/1200	10,500 psi	
CCI 209	WSF	WAA20			16.5/1200	11,300 psi	
CCI 209	Herco	WAA20			17.5/1200	10,000 psi	
CCI 209M	Unique	WAA20			15.0/1155	10,200 psi	
CCI 209M	International	Windjammer			14.0/1200	11,100 psi	
Fed. 209	Universal	Windjammer			15.8/1200	10,500 psi	
Fed. 209	WSF	Fed. 20S1			16.5/1200	11,400 psi	
Fed. 209	WSF	Rem. RXP20			17.0/1200	10,500 psi	
Fed. 209	WSF	WAA20			16.5/1200	11,400 psi	
Fed. 209A	IMR 800-X	CB 1078-20			16.0/1190	9,400 psi	
Fed. 209A	IMR 800-X	Fed. 20S1			16.0/1190	9,700 psi	
Fed. 209A	IMR 800-X	Rem. RXP20			16.5/1200	8,800 psi	
Fed. 209A	IMR 800-X	WAA20			16.5/1205	9,400 psi	
Fed. 209A	IMR 800-X	Windjammer			16.5/1215	10,100 psi	
Fed. 209A	IMR PB	Fed. 20S1			15.0/1160	11,900 psi	
Fed. 209A	IMR PB	WAA20			15.5/1180	11,700 psi	
Fed. 209A	IMR SR-4756	CB 1078-20			18.0/1195	10,300 psi	
Fed. 209A	IMR SR-4756	Fed. 20S1			18.0/1190	10,600 psi	
Fed. 209A	IMR SR-4756	Rem. RXP20			18.5/1215	10,700 psi	
Fed. 209A	IMR SR-4756	WAA20F1			18.0/1190	10,000 psi	
Fed. 209A	IMR SR-4756	Windjammer			18.5/1215	10,000 psi	
Fed. 209A	IMR SR-7625	CB 1078-20			16.5/1195	11,700 psi	
Fed. 209A	IMR SR-7625	Fed. 20S1			16.5/1190	11,700 psi	
Fed. 209A	IMR SR-7625	Rem. RXP20			17.0/1200	10,800 psi	
Fed. 209A	IMR SR-7625	WAA20			16.5/1205	11,700 psi	
Fed. 209A	IMR SR-7625	Windjammer			16.5/1200	11,900 psi	
Fed. 209A	Universal	Windjammer			15.8/1200	11,700 psi	
Rem. 209P	IMR 800-X	CB 1078-20			16.5/1195	8,400 psi	
Rem. 209P	IMR 800-X	Fed. 20S1			16.5/1190	8,200 psi	
Rem. 209P	IMR 800-X	Rem. RXP20			16.5/1190	7,500 psi	
Rem. 209P	IMR 800-X	WAA20			16.5/1210	9,300 psi	
Rem. 209P	IMR 800-X	Windjammer			16.5/1190	8,400 psi	
Rem. 209P	IMR PB	WAA20			16.0/1200	11,600 psi	
Rem. 209P	IMR PB	Windjammer			16.0/1200	11,300 psi	
Rem. 209P	International	Rem. RXP20			14.0/1200	10,800 psi	
Rem. 209P	IMR SR-4756	CB 1078-20			18.5/1200	10,000 psi	
Rem. 209P	IMR SR-4756	Fed. 20S1			18.5/1190	10,100 psi	
Rem. 209P	IMR SR-4756	Rem. SP20			19.0/1210	9,700 psi	
Rem. 209P	IMR SR-4756	WAA20F1			18.5/1200	9,800 psi	
Rem. 209P	IMR SR-7625	CB 1078-20			17.0/1210	11,300 psi	
Rem. 209P	IMR SR-7625	Fed. 20S1			16.5/1185	11,100 psi	
Rem. 209P	IMR SR-7625	Rem. RXP20			17.0/1190	10,100 psi	

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2¾" 20-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum		Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type							
Rem. 209P	IMR SR-7625	WAA20			17.0/1200	10,900 psi	
Rem. 209P	IMR SR-7625	Windjammer			17.5/1210	10,300 psi	
Rem. 209P	Universal	Rem. RXP20			15.8/1200	9,800 psi	
Win. 209	Blue Dot	BP Z20	19.5/1205	19.7/1215	20.0/1225	11,500 psi	#4
Win. 209	Blue Dot	BP Z20	19.5/1205	19.7/1215	20.0/1225	11,500 psi	#4
Win. 209	Green Dot	BP SG20S			14.0/1155	10,300 LUP	#3
Win. 209	Green Dot	Fed. 20S1	14.0/1155	14.3/1180	14.5/1200	10,300 psi	
Win. 209	Green Dot	Rem. RXP20	14.5/1155	14.8/1180	15.0/1200	10,000 psi	
Win. 209	Green Dot	WAA20	14.0/1155	14.3/1180	14.5/1200	10,600 psi	
Win. 209	Herco	Fed. 20S1			16.5/1200	10,700 psi	
Win. 209	Herco	Pat.Ctrl.20			16.5/1200	11,300 psi	
Win. 209	Herco	Rem. RXP20			16.5/1200	9,000 psi	
Win. 209	Herco	WAA20			16.5/1200	9,600 psi	
Win. 209	IMR 800-X	CB 1078-20			16.0/1190	9,600 psi	
Win. 209	IMR 800-X	Fed. 20S1			16.0/1190	9,600 psi	
Win. 209	IMR 800-X	Rem. RXP20			16.5/1210	9,400 psi	
Win. 209	IMR 800-X	WAA20			16.5/1205	9,900 psi	
Win. 209	IMR 800-X	Windjammer			16.5/1200	10,300 psi	
Win. 209	IMR PB	BP SG20S	15.0/1200	15.2/1210	15.5/1225	11,000 LUP	#3
Win. 209	IMR PB	Fed. 20S1			15.5/1175	11,800 psi	
Win. 209	IMR PB	Rem. RXP20			16.0/1195	11,400 psi	
Win. 209	IMR PB	WAA20			16.0/1195	11,700 psi	
Win. 209	IMR PB	Windjammer			16.5/1200	11,800 psi	
Win. 209	International	BP SG20S			15.4/1200	11,000 psi	#3
Win. 209	International	Pat.Ctrl.20			14.0/1200	11,200 psi	
Win. 209	International	WAA20			14.0/1200	11,800 psi	
Win. 209	Solo 1250	BP SG20S	15.2/1150	15.7/1175	16.2/1200	10,700 LUP	#3
Win. 209	Solo 1250	BP SG20S			16.2/1200	10,400 LUP	#2
Win. 209	Solo 1250	Pat.Ctrl.20	14.5/1155	15.0/1180	15.5/1200	11,800 psi	#5
Win. 209	Solo 1250	Rem. RXP20	14.5/1155	15.0/1180	15.5/1200	11,500 psi	#5
Win. 209	Solo 1250	WAA20			14.0/1155	11,400 psi	#5
Win. 209	Solo 1250	WAA20F1			15.0/1200	12,000 psi	#5
Win. 209	IMR SR-4756	CB 1078-20			18.0/1180	9,700 psi	
Win. 209	IMR SR-4756	Fed. 20S1			18.0/1205	10,700 psi	
Win. 209	IMR SR-4756	Rem. SP20			18.5/1200	9,900 psi	
Win. 209	IMR SR-4756	WAA20F1			18.5/1200	9,900 psi	
Win. 209	IMR SR-4756	Windjammer			18.5/1195	9,900 psi	
Win. 209	IMR SR-7625	CB 1078-20			16.5/1190	10,800 psi	
Win. 209	IMR SR-7625	Fed. 20S1			16.5/1195	11,700 psi	
Win. 209	IMR SR-7625	Rem. RXP20			17.0/1210	10,600 psi	
Win. 209	IMR SR-7625	WAA20			17.0/1205	10,600 psi	
Win. 209	IMR SR-7625	Windjammer			17.0/1205	10,900 psi	
Win. 209	Unique	Fed. 20S1	15.0/1155	15.3/1180	15.5/1200	10,400 psi	
Win. 209	Unique	Lage Uniwad			15.5/1155	10,500 psi	
Win. 209	Unique	Pat.Ctrl.20			16.0/1200	11,200 psi	
Win. 209	Unique	Rem. RXP20	15.0/1155	15.5/1180	16.0/1200	9,000 psi	
Win. 209	Unique	WAA20	15.0/1155	15.5/1180	16.0/1200	10,500 psi	
Win. 209	Universal	BP SG20S			15.7/1200	10,300 LUP	#3
Win. 209	Universal	Pat.Ctrl.20			15.8/1200	10,800 psi	
Win. 209	Universal	WAA20			15.5/1200	10,200 psi	
Win. 209	WSF	BP SG20S			15.2/1200	11,000 LUP	#2
Win. 209	WSF	Rem. RXP20			17.0/1200	10,700 psi	
Win. 209	WSF	WAA20			16.5/1200	11,200 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

2¾" 20-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum		Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type							
Win. AATP	Universal	WAA20			16.0/1200	11,200 psi	
Win. AATP	WSF	WAA20			16.5/1200	11,000 psi	#6
Winchester: Polyformed (Separate Plastic Base Wad)							
CCI 209	International	Rem. RXP20			15.0/1200	9,200 psi	
CCI 209	International	WAA20F1			14.5/1200	9,300 psi	
CCI 209	International	Windjammer			15.0/1200	10,400 psi	
CCI 209	Solo 1250	WAA20	16.5/1155	17.5/1180	18.5/1200	10,800 psi	#1
CCI 209	Universal	Rem. RXP20			18.5/1200	7,500 psi	
CCI 209	Universal	WAA20F1			18.0/1200	7,900 psi	
Fed. 209	Solo 1250	WAA20			16.0/1155	9,400 psi	#1
Fed. 209A	International	Rem. RXP20			14.7/1200	11,100 psi	
Fed. 209A	International	Windjammer			14.7/1200	11,000 psi	
Fed. 209A	Universal	Rem. RXP20			17.5/1200	8,500 psi	
Fed. 209A	Universal	WAA20F1			17.0/1200	8,500 psi	
Fed. 209A	Universal	Windjammer			17.0/1200	8,700 psi	
Rem. 209P	Solo 1250	WAA20	16.5/1155	17.5/1180	18.5/1200	10,400 psi	#1
Win. 209	International	Rem. RXP20			15.5/1200	10,600 psi	
Win. 209	International	WAA20F1			15.0/1200	10,700 psi	
Win. 209	International	Windjammer			15.0/1200	11,200 psi	
Win. 209	Solo 1250	Pat.Ctrl.20			17.0/1155	9,300 psi	#1
Win. 209	Solo 1250	Rem. RXP20	17.5/1155	18.0/1180	18.5/1200	10,800 psi	#1
Win. 209	Solo 1250	WAA20	17.5/1155	18.0/1180	18.5/1200	10,700 psi	#1
Win. 209	Solo 1250	WAA20F1			17.5/1155	9,000 psi	#1
Win. 209	Solo 1250	Windjammer			16.5/1155	10,000 psi	#1
Win. 209	Unique	Fed. 20S1			14.5/1155	9,700 psi	
Win. 209	Unique	Fed. 20S1			15.5/1200	10,800 psi	
Win. 209	Unique	Rem. RXP20			15.5/1200	9,700 psi	
Win. 209	Unique	WAA20			14.5/2155	9,800 psi	
Win. 209	Unique	WAA20			15.5/1200	10,700 psi	
Win. 209	Universal	Rem. RXP20			18.0/1200	8,600 psi	
Win. 209	Universal	WAA20F1			17.5/1200	8,300 psi	
Win. 209	Universal	Windjammer			17.5/1200	8,500 psi	

Load Notes: #1 = 6-point crim. #2 = Long wad. #3 = Short wad. #4 = Maximum Field. #5 = 8-point crimp. #6 = This load duplicates ballistics of Winchester's 2 1/2 dram equivalent AA Target loading.

2 3/4": 1 Ounce Lead Shot							
Estate: Cheddite							
Fio. 615	W 571	BP SG20L			22.0/1200	9,700 LUP	#3
Federal: Paper							
Fed. 209	Herco	Rem. RXP20			17.0/1165	11,500 psi	
Fed. 209	Herco	Rem. SP20			16.5/1165	11,500 psi	
Fed. 209	Herco	WAA20			16.0/1165	11,200 psi	
Fed. 209	Herco	WAA20F1			16.5/1165	11,300 psi	
Federal: Plastic (Paper Base Wad)							
CCI 209	Herco	Fed. 20S1			18.5/1220	9,800 psi	
CCI 209	IMR PB	Rem. SP20			17.5/1155	10,600 LUP	
CCI 209	IMR PB	Trico #2			17.0/1150	10,500 LUP	
CCI 209	IMR SR-7625	Rem. SP20			19.5/1205	10,000 LUP	
CCI 209	IMR SR-7625	Trico #2			19.5/1225	10,500 LUP	
CCI 209M	HS-7	Rem. RXP20	24.0/1165	24.6/1195	25.2/1220	8,600 psi	
CCI 209M	IMR 800-X	Fed. 20S1			18.0/1175	9,600 LUP	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums.

2¾" 20-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum		Maximum	Maximum Pressure	Load Notes
Federal: Plastic (Paper Base Wad)							
CCI 209M	IMR 800-X	H. Versalite			18.5/1180	9,200 LUP	
CCI 209M	IMR 800-X	Lage Uniwad			18.5/1170	8,500 LUP	
CCI 209M	IMR 800-X	Rem. SP20			18.0/1165	8,600 LUP	
CCI 209M	IMR 800-X	WAA20F1			18.0/1175	8,600 LUP	
Fed. 209	Blue Dot	Rem. SP20			24.0/1220	10,200 psi	
Fed. 209	Blue Dot	WAA20F1			24.0/1220	10,100 psi	
Fed. 209	Herco	Rem. RXP20			17.0/1165	11,300 psi	
Fed. 209	Herco	Rem. SP20			17.0/1165	9,600 psi	
Fed. 209	Herco	WAA20F1			16.5/1165	11,100 psi	
Fed. 209	IMR 800-X	Fed. 20S1	17.5/1160	18.0/1190	18.5/1215	10,500 LUP	
Fed. 209	IMR 800-X	H. Versalite	18.0/1165	18.5/1195	19.0/1220	9,900 LUP	
Fed. 209	IMR 800-X	Lage Uniwad	18.0/1165	18.5/1195	19.0/1225	10,200 LUP	
Fed. 209	IMR 800-X	Rem. SP20	17.5/1160	18.3/1190	19.0/1220	9,600 LUP	
Fed. 209	IMR 800-X	WAA20F1	17.5/1160	18.3/1195	19.0/1230	10,000 LUP	
Fed. 209	Solo 1500	Fed. 20S1	22.5/1165	23.0/1195	23.5/1220	10,600 LUP	
Fed. 209	IMR SR-4756	Rem. SP20	20.5/1165	21.0/1195	21.5/1220	10,600 LUP	
Fed. 209	IMR SR-4756	Trico #2	20.5/1170	21.3/1200	22.0/1230	10,300 LUP	
Fed. 209	IMR SR-7625	Rem. SP20			17.5/1160	10,00 LUP	
Fed. 209	Unique	Rem. SP20			16.0/1165	10,800 psi	
Fed. 209	Unique	WAA20F1			15.5/1165	11,300 psi	
Fed. 209A	HS-6	Fed. 20S1	20.2/1165	21.4/1195	22.5/1220	10,100 psi	
Fed. 209A	HS-7	Fed. 20S1	23.0/1165	24.0/1195	25.0/1220	9,300 psi	
Fed. 410	IMR PB	Lage Uniwad			17.5/1170	10,900 LUP	
Fed. 410	IMR PB	Rem. SP20			17.5/1160	10,300 LUP	
Fed. 410	IMR SR-7625	Lage Uniwad			20.0/1205	9,800 LUP	
Win. 209	HS-6	Rem. RXP20	21.5/1165	22.4/1195	23.2/1220	8,700 psi	
Win. 209	HS-7	Rem. RXP20	23.5/1165	24.5/1195	25.5/1220	8,900 psi	
Win. 209	IMR SR-4756	Lage Uniwad			21.5/1210	9,900 LUP	
Win. 209	IMR SR-7625	Rem. SP20	18.0/1160	18.5/1185	19.0/1205	10,500 LUP	
Win. 209	IMR SR-7625	Trico #2	18.0/1165	18.3/1175	18.5/1180	10,600 LUP	
Fiocchi: Plastic							
CCI 209	HS-6	Fed. 20S1	21.5/1165	21.8/1195	22.0/1220	10,200 psi	
CCI 209	HS-7	Fed. 20S1	23.0/1165	23.5/1195	24.0/1220	10,600 psi	
CCI 209	HS-7	Rem. RXP20	24.0/1165	24.5/1195	25.0/1220	8,800 psi	
CCI 209M	Blue Dot	Rem. SP20			24.0/1220	10,700 psi	
Fed. 209	Blue Dot	Rem. SP20	23.0/1220	24.0/1250	25.0/1275	10,300 psi	
Fed. 209A	HS-7	Rem. RXP20	22.5/1165	23.8/1195	25.0/1220	9,800 psi	
Fio. 615	Blue Dot	Rem. SP20			27.5/1220	9,200 psi	
Fio. 616	Blue Dot	BP Z20	24.0/1235	24.7/1250	25.5/1265	11,400 psi	#2
Fio. 616	Blue Dot	BP Z20	24.0/1235	24.7/1250	25.5/1265	11,400 psi	#2
Fio. 616	Blue Dot	Rem. SP20	24.5/1220	25.3/1250	26.0/1275	10,800 psi	
Fio. 616	Herco	BP Z20	17.0/1200	17.1/1210	17.3/1225	11,300 psi	#2
Fio. 616	Herco	BP Z20	17.0/1200	17.1/1210	17.3/1225	11,300 psi	#2
Fio. 616	HS-6	BP SG20L			22.0/1175	10,300 psi	#3
Fio. 616	IMR 800-X	BP SG20S			16.0/1170	10,300 psi	#1
Fio. 616	Unique	BP SG 20S	16.0/1100	16.5/1150	17.5/1225	10,800 psi	#1
Rem. 209	Blue Dot	Rem. SP20			22.5/1220	10,600 psi	
Win. 209	Blue Dot	Rem. SP20			26.0/1275	10,600 psi	
Win. 209	HS-6	WAA20	21.0/1165	21.5/1195	22.0/1220	10,200 psi	
Win. 209	HS-6	Windjammer	20.5/1165	21.0/1195	21.5/1220	10,200 psi	
Win. 209	HS-7	WAA20	23.0/1165	23.5/1195	24.0/1220	9,800 psi	
Win. 209	HS-7	Windjammer	23.0/1165	23.8/1195	24.5/1220	9,800 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

2¾" 20-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum		Maximum	Maximum Pressure	Load Notes
Remington: Premier & Nitro 27 & STS							
CCI 209	Blue Dot	Rem. SP20	22.0/1155	22.5/1190	23.0/1220	10,300 psi	
CCI 209M	Blue Dot	Rem. SP20	21.5/1155	22.0/1190	22.5/1220	10,900 psi	
Fed. 209	Blue Dot	Rem. SP20			20.5/1155	11,300 psi	
Fio. 616	Blue Dot	Rem. SP20	22.5/1155	23.0/1190	23.5/1220	11,000 psi	
Rem. 209P	Blue Dot	Rem. SP20	21.5/1155	22.8/1190	24.0/1220	11,100 psi	
Rem. 209P	Blue Dot	WAA20F1	21.5/1155	22.5/1190	23.5/1220	10,900 psi	
Rem. 209P	Herco	WAA20F1			17.5/1155	11,500 psi	
Rem. 209P	IMR SR-4756	BP SG20S			19.5/1200	10,300 LUP	#1
Win. 209	Blue Dot	Rem. SP20	21.5/1155	21.8/1190	22.0/1220	11,100 psi	
Win. 209	Unique	BP SG20S			16.0/1200	9,200 LUP	#1
Win. 209	WSF	BP SG20L			17.5/1200	10,600 LUP	#3
Remington: Premier & RXP							
Fed. 209A	HS-6	Fed. 20S1	19.0/1165	19.7/1195	20.4/1220	11,800 psi	
Fed. 209A	HS-7	Fed. 20S1	20.5/1165	21.3/1195	22.0/1220	11,200 psi	
Rem. 209P	HS-7	Rem. SP20	23.0/1165	24.0/1195	25.0/1220	10,800 LUP	
Win. 209	HS-6	WAA20			19.0/1165	10,400 psi	
Win. 209	HS-7	WAA20			21.0/1165	10,500 psi	
Win. 209	HS-7	WAA20F1	21.0/1165	22.0/1195	23.0/1220	11,200 psi	
Remington: RXP							
Rem. 209P	Solo 1500	Rem. SP20			21.5/1165	10,600 LUP	
Rem. 97*	Herco	Rem. RXP20			18.0/1220	11,000 psi	
Rem. 97*	Unique	Fed. 20S1			15.5/1165	10,800 psi	
Rem. 97*	Unique	Rem. RXP20			16.0/1165	10,600 psi	
Rem. 97*	Unique	WAA20			15.5/1165	11,200 psi	
Win. 209	W540	WAA20F1			21.0/1165	10,100 LUP	
Win. 209	W540	WAA20F1			22.0/1220	10,700 LUP	
Win. 209	W571	WAA20F1			23.0/1165	9,700 LUP	
Win. 209	W571	WAA20F1			25.0/1240	10,900 LUP	
Remington: SP (Separate Plastic Base Wad)							
CCI 209M	IMR 800-X	Lage Uniwad			18.0/1210	10,700 LUP	
Rem. 209	Blue Dot	Rem. SP20			23.0/1220	10,300 psi	
Rem. 209	Blue Dot	WAA20F1			24.0/1220	10,100 psi	
Rem. 209	Herco	Rem. SP20			17.5/1165	11,300 psi	
Rem. 209	Herco	WAA20F1			17.5/1165	10,700 psi	
Rem.209P	Blue Dot	BP SG20S			23.5/1235	10,600 psi	#1
Remington: Unibody (Integral Plastic Base Wad)							
CCI 209M	Blue Dot	Rem. SP20			22.0/1165	10,500 psi	
Rem. 209	Blue Dot	Rem. SP20			21.5/1165	10,500 psi	
Rem. 209	Blue Dot	Rem. SP20			21.0/1165	11,500 psi	
Rem. 209	Blue Dot	WAA20F1			21.5/1165	11,100 psi	
Rem. 209P	Blue Dot	Rem. SP20			22.0/1165	11,300 psi	
Winchester: Compression-Formed AA Type							
CCI 209	IMR-SR-4756	Trico #2			20.0/1145	10,100 LUP	
CCI 209M	IMR 800-X	Lage Uniwad			18.0/1210	10,700 LUP	
CCI 209M	IMR 800-X	WAA20F1			18.0/1215	10,900 LUP	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

2¾" 20-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum		Powder Charge (grains)/ Velocity (fps) Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type							
Fed. 209	IMR 800-X	H. Versalite			16.5/1155	10,600 LUP	
Fed. 209	IMR 800-X	Lage Uniwad			16.5/1155	10,700 LUP	
Fed. 209	IMR 800-X	Rem. RXP20			17.0/1175	10,600 LUP	
Fed. 209	IMR 800-X	WAA20F1			16.5/1165	10,600 LUP	
Fed. 410	IMR SR-4756	Trico #2			20.5/1170	10,800 LUP	
Rem. 209P	IMR 800-X	H. Versalite			20.0/1220	10,900 LUP	
Win. 209	Blue Dot	Rem. RXP20			23.0/1220	11,300 psi	
Win. 209	Blue Dot	Rem. SP20			23.5/1220	11,400 psi	
Win. 209	Blue Dot	WAA20F1			23.0/1220	11,500 psi	
Win. 209	Herco	Rem. RXP20			16.5/1165	9,600 psi	
Win. 209	Herco	Rem. SP20			16.5/1165	10,000 psi	
Win. 209	Herco	WAA20			16.5/1165	10,400 psi	
Win. 209	HS-6	BP SG20S			22.5/1220	10,900 LUP	#1
Win. 209	HS-6	Rem. SP20	23.0/1165	23.5/1195	24.0/1220	10,800 LUP	
Win. 209	HS-6	WAA20F1	21.5/1165	22.0/1195	22.5/1220	10,900 LUP	
Win. 209	HS-7	BP SG20S			25.0/1250	10,700 LUP	#1
Win. 209	HS-7	Rem. SP20	23.5/1165	24.0/1195	24.5/1220	10,600 LUP	
Win. 209	HS-7	WAA20F1	23.5/1165	24.5/1220	25.5/1250	10,800 LUP	
Win. 209	IMR 800-X	H. Versalite			17.0/1170	10,300 LUP	
Win. 209	IMR 800-X	Lage Uniwad	17.0/1165	17.5/1185	18.0/1205	10,600 LUP	
Win. 209	IMR 800-X	Rem. RXP20			17.0/1165	10,300 LUP	
Win. 209	IMR 800-X	WAA20F1	16.5/1160	17.0/1185	17.5/1205	10,700 LUP	
Win. 209	Solo 1500	Rem. SP20			21.5/1165	11,000 LUP	
Win. 209	W540	Rem. SP20			23.0/1165	10,000 LUP	
Win. 209	W540	Rem. SP20			24.0/1220	10,700 LUP	
Win. 209	W540	WAA20F1			21.5/1165	9,900 LUP	#4
Win. 209	W540	WAA20F1			22.5/1220	10,900 LUP	
Win. 209	W571	Rem. SP20			23.5/1165	9,800 LUP	#5
Win. 209	W571	Rem. SP20			24.5/1220	10,300 LUP	
Win. 209	W571	WAA20F1			23.5/1165	9,300 LUP	
Win. 209	W571	WAA20F1			25.5/1250	10,800 LUP	
Winchester: Polyformed (Separate Plastic Base Wad)							
Fed. 209A	HS-6	Rem. SP20	20.0/1165	20.8/1195	21.5/1220	10,300 psi	
Fed. 209A	Universal	Rem. SP20			16.5/1165	9,400 psi	
Fed. 209A	Universal	WAA20F1	16.3/1165	16.8/1195	17.2/1220	11,200 psi	
Win. 209	HS-6	WAA20F1			20.0/1165	8,900 psi	
Win. 209	Solo 1500	WAA20F1	22.5/1165	23.3/1195	24.0/1220	10,100 LUP	
Win. 209	Universal	WAA20F1			16.5/1165	8,900 psi	

Load Notes: #1 = Short wad. #2 = Maximum Field. #3 = Long Wad. #4 = This load duplicates ballistics of Winchester's 2 1/2 dram equivalent Xpert loading. #5 = This load duplicates ballistics of Winchester's 2 3/4 dram equivalent Super-X loading.

2 3/4": 1 1/8 Ounce Lead Shot							
Federal: Plastic (Paper Base Wad)							
Fed. 209	Blue Dot	Rem. SP20			23.0/1175	10,900 psi	
Fed. 209	IMR 800-X	Rem. SP20			19.0/1170	10,700 LUP	
Win. 209	IMR 800-X	Lage Uniwad			19.0/1170	10,600 LUP	
Win. 209	IMR 800-X	WAA20F1			19.0/1180	10,700 LUP	
Fiocchi: Plastic							
Fed. 209	Blue Dot	Rem. SP20			23.5/1175	10,700 psi	
Fio. 616	Blue Dot	Rem. SP20			23.5/1175	10,000 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

2¾" 20-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum		Maximum	Maximum Pressure	Load Notes
Fiocchi: Plastic							
Win. 209	Blue Dot	Rem. SP20			23.5/1175	11,400 psi	
Remington: RXP							
Win. 209	W571	WAA20F1			23.5/1150	11,100 LUP	
Remington: Unibody & RXP & Premier							
Rem. 209P	Blue Dot	Rem. SP20			22.0/1175	11,300 psi	
Rem. 209P	Blue Dot	WAA20F1			22.0/1175	11,500 psi	
Rem. 209P	HS-7	Rem. RP20			23.5/1150	11,000 LUP	
Winchester: Compression-Formed AA Type							
CCI 109	W571	Rem. RP20			24.5/1175	10,500 LUP	
Fed. 209	HS-7	Rem. RP20			24.0/1175	11,000 LUP	
Fed. 209	W571	Rem. RP20			24.0/1175	11,000 LUP	
Rem. 209P	HS-7	Rem. RP20			24.5/1175	10,600 LUP	
Win. 209	HS-7	Rem. RP20			24.5/1175	10,300 LUP	
Win. 209	W571	Rem. RP20			24.5/1175	10,200 LUP	
Win. 209	W571	WAA20F1			24.0/1175	10,700 LUP	#1

Load Notes: #1 = This load requires 80 to 100 pounds wad pressure.

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

3" 20-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
3": 1 Ounce Lead Shot								
Ballistic Products: Multi-Hull 20 3A								
Mt. 209	IMR SR-4756	Z20				27.0/1310	9,200 psi	OSC
3": 1 1/16 Ounce Lead Shot								
Federal: Plastic (Paper Base Wad)								
Fed. 209	Blue Dot	Fed. 20S1				28.0/1310	10,300 psi	
Fed. 209	Blue Dot	Rem. RXP20	27.0/1255	27.3/1275	27.6/1290	28.0/1310	10,200 psi	
Fed. 209	Blue Dot	WAA20	26.5/1255	27.2/1275	27.9/1290	28.5/1310	10,600 psi	
Winchester: Compression-Formed AA Type								
Win. 209	Blue Dot	Rem. SP20				26.0/1255	10,600 psi	
3": 1 1/8 Ounce Lead Shot								
Ballistic Products: Multi-Hull 20 3A								
Mt. 209	IMR SR-4756	Z20				27.0/1275	9,300 psi	OSC
Federal: Plastic (Paper Base Wad)								
Fed. 209	Blue Dot	Rem. SP20				26.5/1230	10,300 psi	
Fed. 209	Blue Dot	WAA20F1				26.0/1230	10,100 psi	
Fed. 209	IMR 800-X	Fed. 20S1				20.5/1205	10,400 LUP	
Fed. 209	IMR 800-X	Lage Uniwad				20.5/1200	10,800 LUP	
Fed. 209	IMR 800-X	Rem. RXP20				21.0/1215	10,700 LUP	
Fed. 209	IMR SR-4756	Rem. SP20				24.0/1215	10,900 LUP	
Fed. 209	IMR SR-4756	Trico #2				24.0/1200	10,600 LUP	
Fed. 209	IMR SR-4756	WAA20F1				24.0/1215	10,500 LUP	
Fed. 209A	HS-6	Fed. 20S1				23.5/1220	11,500 psi	
Fed. 209A	HS-7	Fed. 20S1				25.8/1220	11,600 psi	
Fed. 209A	HS-7	Fed. 20S1				27.3/1250	11,700 psi	
Fed. 410	IMR SR-4756	Lage Uniwad				24.5/1220	10,500 LUP	
Rem. 209P	IMR SR-4756	Fed. 20S1			24.0/1250		11,200 psi	
Rem. 209P	IMR SR-4756	Rem. SP20			24.5/1250		11,200 psi	
Rem. 209P	IMR SR-4756	WAA20			24.0/1250		11,000 psi	
Rem. 209P	IMR 800-X	Fed. 20S1				22.0/1300	11,700 psi	
Rem. 209P	IMR 800-X	Rem. SP20			21.0/1250		11,600 psi	
Rem. 209P	IMR 800-X	WAA20				22.0/1300	11,400 psi	
Win. 209	HS-6	WAA20F1				23.0/1220	10,600 psi	
Win. 209	HS-7	Fed. 20S1				28.0/1250	11,400 psi	
Win. 209	HS-7	WAA20F1				25.5/1220	10,100 psi	
Win. 209	IMR SR-4756	Rem. SP20				26.0/1270	10,600 LUP	
Win. 209	IMR SR-4756	WAA20F1				26.0/1265	10,600 LUP	
Fiocchi								
Fio. 616	Steel	BW20				28.0/1400	10,250 psi	OSC

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

3" 20-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: Nitro Steel (3-Piece Separate Plastic Base Wad)								
Win. 209	HS-7	WAA20				27.5/1250	10,900 psi	
Remington: Premier & Nitro & STS								
CCI 209M	HS-7	Rem. RXP20				24.8/1250	11,500 psi	
Win. 209	HS-7	Rem. RXP20				25.0/1250	11,900 psi	
Remington: Premier Plastic								
Fed. 209A	IMR 800-X	Fed. 20S1	15.5/1100				11,600 psi	
Fed. 209A	IMR 800-X	Rem. SP20	15.5/1100				11,800 psi	
Fed. 209A	IMR 800-X	WAA20	15.5/1100				11,600 psi	
Rem. 209P	IMR 800-X	Fed. 20S1		17.0/1150			11,600 psi	
Rem. 209P	IMR 800-X	Rem. SP20		17.0/1150			11,700 psi	
Rem. 209P	IMR 800-X	WAA20	16.0/1100				11,100 psi	
Win. 209	IMR 800-X	Fed. 20S1	16.5/1100				11,500 psi	
Win. 209	IMR 800-X	Rem. SP20	16.0/1100				11,600 psi	
Win. 209	IMR 800-X	WAA20	16.0/1100				11,600 psi	
Winchester: Compression-Formed AA Type								
CCI 109	W571	WAA20				27.0/1220	11,100 LUP	
CCI 209M	HS-7	WAA20				26.5/1250	12,100 psi	
Fed. 410	IMR SR-4756	Lage Uniwad				21.5/1190	10,900 LUP	
Fed. 410	IMR SR-4756	Rem. SP20				25.0/1215	10,900 LUP	
Fed. 410	IMR SR-4756	Trico #2				24.0/1190	10,600 LUP	
Fed. 410	IMR SR-4756	WAA20F1				24.5/1200	10,400 LUP	
Rem. 209P	HS-7	WAA20				27.0/1220	11,200 LUP	
Win. 209	Blue Dot	Rem. SP20				25.5/1230	11,000 psi	
Win. 209	Blue Dot	WAA20F1				25.5/1230	11,100 psi	
Win. 209	HS-7	WAA20				27.0/1220	11,100 LUP	
Win. 209	HS-7	WAA20				27.0/1250	11,800 psi	
Win. 209	IMR SR-4756	Rem. SP20				23.5/1200	10,900 LUP	
Win. 209	IMR SR-4756	Trico #2				23.0/1170	10,800 LUP	
Win. 209	IMR SR-4756	WAA20F1				23.5/1185	10,900 LUP	
Win. 209	W571	WAA20				27.0/1220	11,000 LUP	
3": 1 3/16 Ounce Lead Shot								
Winchester: Compression-Formed AA Type								
Win. 209	W571	Rem. R20				27.5/1195	10,600 LUP	
3": 1 1/4 Ounce Lead Shot								
Federal: Plastic (Paper Base Wad)								
Fed. 209	Blue Dot	Rem. SP20				25.5/1185	10,600 psi	#1
Fed. 209	Blue Dot	WAA20F1				25.5/1185	10,400 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

3" 20-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Plastic (Paper Base Wad)								
Fed. 209	IMR 800-X	Lage Uniwad				19.0/1100	10,900 LUP	
Fed. 209	IMR 800-X	Rem. RXP20				19.5/1120	10,400 LUP	
Fed. 209A	HS-7	Rem. RXP20				25.5/1185	11,000 psi	
Rem. 209P	IMR 800-X	Rem. SP20			19.5/1150		11,400 psi	
Rem. 209P	IMR 800-X	WAA20F1				20.0/1175	11,000 psi	
Win. 209	IMR 800-X	Rem. SP20	18.0/1100				11,400 psi	
Win. 209	IMR 800-X	WAA20F1		18.5/1125			11,400 psi	
Remington: Nitro Steel (3-Piece Separate Plastic Base Wad)								
Win. 209	HS-7	Rem. RXP20				26.5/1185	10,600 psi	
Remington: Premier & Nitro 27 & STS								
Win. 209	HS-7	H. Versalite				23.0/1185	11,600 psi	
Winchester: Compression-Formed AA Type								
CCI 109	W571	WAA20				24.0/1135	11,000 LUP	
Rem. 209P	HS-7	WAA20				24.0/1135	11,000 LUP	
Win. 209	Blue Dot	Rem. SP20				24.0/1135	10,900 psi	
Win. 209	Blue Dot	Rem. SP20				25.0/1190	11,500 psi	
Win. 209	Blue Dot	WAA20F1				23.0/1135	10,200 psi	
Win. 209	Alliant 2400	Rem. SP20				34.5/1240	9,600 psi	
Win. 209	HS-7	WAA20				24.0/1135	10,900 LUP	
Win. 209	HS-7	WAA20F1				24.7/1185	11,800 psi	
Win. 209	W571	WAA20				24.0/1135	10,800 LUP	

Load Notes: #1 = Add one 28-gauge, 0.135" card inside bottom of shotcup. #2 = Remove insert from wad.

(Photo courtesy Browning)

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

Chapter 14

16-GAUGE LOAD DATA

16-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
2 1/2": 5/8 Ounce Lead Shot								
Fiocchi								
Fio. 616	Titewad	OB16 + SG16		20.0/1340			9,475 psi	
Fio. 616	Titewad	OB16 + SG16			22.0/1365		10,200 psi	
Fio. 616	Titewad	OB16 + SG16				24.0/1500	11325 psi	
2 1/2": 11/16 Ounce Lead Shot								
Fiocchi: English Style								
Fio. 616	Herco	BP DX16 (Spreader)				21.0/1160	8,100 psi	#1
2 1/2": 3/4 Ounce Lead Shot								
Fiocchi								
Fio. 616	Clays	Two NC16 + one HCW16 card			19.5/1450		11,000 psi	
Fio. 616	Clays	SG16			20.0/1450		11,000 psi	
Fio. 616	Nitro-100	NC16 + SG16			20.0/1340		9,875 psi	
Fio. 616	Titewad	NC16 + SG16			20.0/1340		10,075 psi	
Fio. 616	Titewad	SG16			20.0/1450		11,100 psi	
Fio. 616	Titewad	NC16 + Z16			19.0/1340		9,950 psi	Roll Crimp
2 1/2": 7/8 Ounce Lead Shot								
Fiocchi								
Fio. 616	Clays	Z16		16.5/1300			9,750 psi	
Fio. 616	Clays	Z16			17.0/1350		10,300 psi	
Fio. 616	Clays	SG16				17.5/1330	10,000 psi	
Fio. 616	Int'l Clays	SG16				22.0/1365	10,975 psi	
Fio. 616	IMR PB	SG16				22.0/1270	9,525 psi	
Fio. 616	Solo 1250	SG16				26.0/1310	10,050 psi	
Fio. 616	IMR SP-7625	SG16				26.0/1275	9,525 psi	
Fio. 616	Titewad	SG16		17.5/1390			11,000 psi	
Fio. 616	Titewad	OB16 + one HCW16 card			18.0/1400		11,350 psi	
Fio. 616	Titewad	NC16 + three 14C16 card				19.0/1400	11,350 psi	
Fio. 616	IMR PB	One NC16 + one HCW16 card				22.0/1245	8,850 psi	Roll Crimp
Fio. 616	Titewad	SG16				19.5/1410	11,200 psi	Roll Crimp
Fio. 616	Universal	Z16				24.5/1285	10,150 psi	Roll Crimp

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

16-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
2 1/2": 1 Ounce Lead Shot								
Fiocchi								
Fio. 616	IMR HS-6	Z16				26.0/1230	9,450 psi	
Fio. 616	Int'l Clays	SG16				20.0/1330	10,800 psi	
Fio. 616	Longshot	Z16		27.0/1220			8,925 psi	
Fio. 616	Longshot	Z16			29.0/1235		9,300 psi	
Fio. 616	IMR PB	SG16		18.0/1200			8,750 psi	
Fio. 616	IMR PB	Z16			20.0/1280		9,650 psi	
Fio. 616	Solo 1000	SG16				18.0/1320	10,925 psi	
Fio. 616	Solo 1250	SG16				24.0/1290	10,275 psi	
Fio. 616	Solo 1250	Z16				24.0/1300	10,525 psi	
Fio. 616	IMR SR-7625	SG16				26.0/1285	10,275 psi	
Fio. 616	Universal	Z16			24.5/1330		11,000 psi	
Fio. 616	Universal	SG16				25.0/1330	11,300 psi	
Fio. 616	Int'l Clays	Two NC16 + one HCW16 card				22.0/1325	10,800 psi	Roll Crimp
Fio. 616	Int'l Clays	Three NC16 + one 38C16 card				22.0/1325	10,800 psi	Roll Crimp
Fio. 616	Longshot	OB16 + one HCW16 card				32.0/1300	10,900 psi	Roll Crimp
Fio. 616	Longshot	SG16				31.0/1220	9,300 psi	Roll Crimp
Fio. 616	IMR SR-7625	One NC16 + 1310				27.0/1310	10,600 psi	Roll Crimp
Fio. 616	Universal	Z16			24.0/1240		9,650 psi	Roll Crimp
Fio. 616	Universal	Z16				25.5/1300	9,800 psi	Roll Crimp
2 1/2": 1 1/8 Ounce Lead Shot								
Fiocchi								
Fio. 616	IMR HS-6	Z16				23.0/1220	8,800 psi	
Fio. 616	IMR HS-6	Two OB16 + one 38C16 card				24.0/1240	9,825 psi	
Fio. 616	IMR HS-7	OB16 + one HCW16 card				25.0/1200	9,475 psi	
Fio. 616	IMR HS-7	Z16				27.0/1185	9,150 psi	
Fio. 616	Longshot	Z16				25.0/1185	8,900 psi	
Fio. 616	IMR SR-7625	Z16				25.0/1330	11,000 psi	
2 5/8": 3/4 Ounce Lead Shot								
Fiocchi (67mm)								
Fio. 616	Titewad	One NC16 + Z16				19.0/1340	9,950 psi	Roll Crimp
2 5/8": 7/8 Ounce Lead Shot								
Fiocchi (67mm)								
Fio. 616	Universal	SG16				25.0/1230	9,550 psi	Roll Crimp
Fio. 616	Universal	Z16				25.0/1270	9,400 psi	Roll Crimp
Fio. 616	Universal	Z16				25.0/1365	11,150 psi	Roll Crimp
2 5/8": 1 Ounce Lead Shot								
Fiocchi (67mm)								
Fio. 616	Longshot	Z16				27.0/1300	10,450 psi	Roll Crimp
Fio. 616	Longshot	Z16				31.0/1265	9,867 psi	Roll Crimp

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

16-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Fiocchi (67mm)								
Fio. 616	International	OB16 + one HCW16 card				23.0/1275	10,033 psi	Roll Crimp
Fio. 616	Longshot	OB16 + one HCW16 card				32.0/1300	10,900 psi	Roll Crimp
Fio. 616	Longshot	OB16 + one HCW16 card				32.0/1300	10,900 psi	Roll Crimp
Fio. 616	Longshot	SG16				31.0/1220	9,300 psi	Roll Crimp
Fio. 616	IMR SR-7625	Two NC16 + one HCW16 card				27.0/1250	9,700 psi	Roll Crimp
Fio. 616	Universal	Z16			22.0/1215		9,250 psi	Roll Crimp
Fio. 616	Universal	Z16				24.0/1240	10,900 psi	Roll Crimp
2 3/4": 3/4 Ounce Lead Shot								
Ballistic Products: Multi-Hull								
Win. 209	Clays	Two NC16 + 23C16				20.0/1435	11,000 psi	Roll Crimp
Fiocchi: Plastic								
Fio. 616	Unique	BP DX16		19.5/1290	20.0/1340	21.0/1400	9,500 psi	#1
Fio. 616	Unique	BP SG16		20.2/1165	21.2/1220	21.7/1235	8,200 psi	#2
Fiocchi (65mm)								
Fio. 616	Clays	SG16 + X-Spreader		18.0/1295			8,400 psi	Roll Crimp
Fio. 616	Clays	One NC16 + one 23C16			19.0/1450		11,500 psi	
Fio. 616	Clays	One NC16 + SG16				21.0/1435	11,100 psi	
Remington: SP (Spearate Plastic Base Wad)								
Fio. 615	Unique	BP SG16				21.0/1400	9,900 psi	#3
Winchester: Compression Formed (AA Type)								
Win. 209	Green Dot	BP DX16				17.5/1200	9,700 psi	#1

Load Notes: #1 = Spreader. #2 = Sporting. #3 = Sporting (add 20-gauge cork over powder).

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
2 3/4": 7/8 Ounce Lead Shot								
Ballistic Products: 16 2A.1								
Ch. 209	Solo 1000	SG16				18.0/1265	8,550 psi	OSC
Win. 209	Clays	Z16				17.0/1340	10,200 psi	
Win. 209	Clays	SG16				17.0/1325	9,800 psi	
Win. 209	Herco	Two OB16 + one HCW16 card				23.0/1345	9,700 psi	
Win. 209	IMR PB	One NC16 + one HCW16 card				22.0/1300	9,900 psi	
Win. 209	Solo 1250	SG16				22.5/1275	8,000 psi	
Win. 209	Solo 1250	Z16				23.0/1300	8,400 psi	
Win. 209	IMR SR-7625	SG16				25.0/1310	7,200 psi	
Win. 209	Titewad	One NC16 + SG16				18.0/1345	10,900 psi	
Win. 209	Universal	Z16				25.5/1350	11,000 psi	
Win. 209	Clays	NC16 + SG16				19.0/1285	9,700 psi	Roll Crimp
Win. 209	Clays	NC16 + Z16				98.0/1300	9,800 psi	Roll Crimp

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

16-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Cheddite								
CCI 209M	Universal	Z16				25.5/1355	10,900 psi	
CCI 209	Titewad	SG16				17.5/1350	11,325 psi	
Win. 209	Clays	Z16				16.5/1300	9,800 psi	
Win. 209	Clays	SG16				17.0/1325	10,000 psi	
Win. 209	Herco	Two OB16 + one HCW16 card				23.0/1345	9,700 psi	
Win. 209	IMR PB	One NC16 + one HCW16 card				22.0/1300	9,750 psi	
Win. 209	Solo 1250	SG16				22.5/1275	8,000 psi	
Win. 209	Solo 1250	Z16				23.0/1300	8,500 psi	
Win. 209	Titewad	NC16 + SG16				18.0/1345	11,000 psi	
Federal: Plastic (Paper Base Wad)								
CCI 209	Herco	BP DX16				23.1/1290	9,600 psi	#2
CCI 209	IMR SR-7625	BP DX16		22.2/1175	22.7/1225	23.2/1280	9,600 psi	#2
CCI 209	Unique	BP DX16				22.2/1225	10,100 psi	#2
CCI 209	WSF	BP DX16				21.2/1210	8,300 psi	#2
Fiocchi: Plastic								
Fio. 616	Herco	BP DX 16		22.0/120	22.3/1340	22.6/1390	10,400 psi	#2
Fio. 616	Herco	BP DX 16				23.0/1390	10,300 psi	#1
Fio. 616	IMR SR-7625	BP DX 16				22.0/1260	9,500 psi	#2
Fio. 616	Unique	BP DX 16				21.0/1290	9,300 psi	#2
Fio. 616	Unique	BP DX 16		22.0/1340	22.5/1370	23.0/1400	9,800 psi	#1
Fio. 616	WSF	BP DX 16				21.0/1200	8,000 psi	#2
Fio. 616	Solo 1000	Z16				20.0/1360	9,900 psi	OSC
Fio. 616	Universal	Z16				25.0/1270	9,400 psi	OSC
Fio. 616	Solo 1000	Z16+X-Stream (spreader)				20.0/1360	10,000 psi	OSC
Fio. 616	Clays	Two NC16 + SG16				19.0/1295	9,800 psi	Roll Crimp
Fio. 616	Clays	One NC16 + Z16				19.0/1310	9,800 psi	Roll Crimp
Remington: SP (Separate Plastic Base Wad)								
Rem. 209	Unique	BP DX16				21.0/1220	8,300 psi	#2
Rem. 209	Unique	BP SG16				21.0/1220	8,300 psi	#1
Rem. 209	WSF	BP DX16				21.0/1220	8,300 psi	#2
Rem. 209	WSF	BP SG16		21.0/1220	21.5/1250	22.0/1280	9,300 psi	#1
Win. 209	WSF	BP DX16				21.2/1210	8,400 psi	#2
Winchester: Compression-Formed AA Type								
Win. 209	Herco	BP DX16				20.0/1230	10,000 psi	#2
Win. 209	Unique	BP DX16				19.0/1200	9,200 psi	#2
Win. 209	W540	BP DX16				23.5/1200	9,300 psi	#2
Win. 209	WSF	BP DX16				20.0/1165	8,400 psi	#2
Win. 209	Longshot	SG16				25.0/1435	9,100 psi	OSC
Win. 209	IMR PB	Z16				21.0/1,200	9,850 psi	OSC
Win. 209	Solo 1000	Z16				19.0/1400	11,000 psi	OSC

Load Notes: #1 = Sporting. #2 = Spreader.

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

16-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
2 3/4": 1 Ounce Lead Shot								
Ballistic Products: 16 2A.1								
Ch. 209B	IMR SR-4756	Z16				30.0/1440	10,500 psi	OSC
Ch. 209B	Solo 1000	Z16				17.0/1200	9,600 psi	OSC
Win. 209	Red Dot	SG16				16.5/1240	10,700 psi	OSC
Ballistic Products: Multi-Hull								
Win. 209	IMR 800-X	One NC16 + 23C16				25.0/1275	9,950 psi	Roll Crimp
Win. 209	IMR 800-X	Z16				26.0/1265	9,950 psi	Roll Crimp
Win. 209	International	Two OB16 + one HCW16 card				19.5/1270	9,750 psi	Roll Crimp
Win. 209	Longshot	Z16				32.0/1300	10,500 psi	Roll Crimp
Win. 209	IMR SR-7625	Two NC16 + one HCW16 card				26.0/1220	9,500 psi	Roll Crimp
Win. 209	Green Dot	Z16				21.0/1255	9,900 psi	Roll Crimp
Cheddite								
Ch. 209	Green Dot	Z16				21.0/1255	9,900 psi	Roll Crimp
Ch. 209	International	Two OB16 + one HCW16 card				19.5/1270	10,000 psi	Roll Crimp
Federal: Plastic (Paper Base Wad)								
CCI 209	Herco	BP SG16	21.5/1220	22.5/1245	23.0/1260	23.5/1275	8,500 psi	#2
CCI 209	IMR SR-7625	BP SG16				23.5/1270	9,500 LUP	#2
CCI 209	Unique	BP SG16	21.5/1220	22.0/1245	22.2/1260	22.5/1275	9,000 psi	#2
CCI 209	W540	BP DX16				23.0/1220	9,800 psi	#1
CCI 209	WSF	BP SG16				22.5/1235	8,800 LUP	#2
Fed. 209A	Green Dot	BP DX16				18.5/1220	9,300 psi	#1
Fed. 209A	Herco	BP DX16	21.5/1220	22.4/1245	22.9/1260	23.5/1275	8,500 psi	#1
Fed. 209A	Unique	BP DX16	21.5/1220	21.9/1245	22.2/1260	22.5/1275	9,000 psi	#1
Federal: Hi Power Plastic (Paper Base Wad)								
Fed. 209A	IMR PB	WAA16	21.5/1275				11,000 psi	
Fed. 209A	IMR SR-7625	WAA16			24.5/1350		11,200 psi	
Fed. 209A	IMR SR-4756	WAA16		25.0/1325			8,500 psi	
Fed. 209A	IMR 800-X	WAA16				24.0/1375	10,400 psi	
Rem. 209P	IMR PB	Rem. SP16			25.0/1350		11,200 psi	
Rem. 209P	IMR SR-7625	Rem. SP16				26.5/1375	10,400 psi	
Rem. 209P	IMR SR-4756	Rem. SP16	27.0/1200				6,400 psi	
Rem. 209P	IMR 800-X	Rem. SP16			25.0/1350		8,300 psi	
Win. 209	IMR PB	WAA16		23.5/1325			11,200 psi	
Win. 209	IMR SR-7625	WAA16		25.0/1325			9,900 psi	
Win. 209	IMR SR-4756	WAA16	25.0/1200				7,200 psi	
Win. 209	IMR 800-X	WAA16				24.5/1375	10,200 psi	
Fiocchi: Plastic 1260								
CCI 209	Unique	BP DX16				23.0/1275	9,100 psi	#1
Fio. 616	Blue Dot	BP SG16	30.0/1350	30.7/1365	31.4/1380	32.0/1400	9,400 psi	#2
Fio. 616	Green Dot	BP DX16				18.0/1165	8,200 psi	#1

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

16-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Fiocchi: Plastic 1260								
Fio. 616	Herco	BP DX16	21.0/1220	21.4/1245	21.7/1260	22.0/1275	9,000 psi	#1
Fio. 616	Herco	BP SG16	21.0/1220	21.5/1245	21.7/1260	22.0/1275	9,000 psi	#2
Fio. 616	Unique	BP DX16	18.0/1165	20.0/1220	20.8/1250	21.5/1275	9,600 psi	#1
Fio. 616	Unique	BP SG16	18.0/1165	20.0/1220	21.2/1250	22.0/1275	10,400 psi	#2
Fio. 616	Universal	BP SG16				23.0/1280	9,600 LUP	#2
Fio. 616	WSF	BP SG16				21.3/1230	8,900 psi	#2
Fio. 616	Longshot	Z16				28.0/1470	9,700 psi	OSC
Fio. 616	Solo 1000	Z16				20.0/1310	10,900 psi	OSC
Fio. 616	IMR SR-4756	Z16				28.0/1330	9,100 psi	OSC
Fio. 616	IMR 800-X	One NC16 + one 23C16 card				25.0/1275	10,000 psi	Roll Crimp
Fio. 616	IMR 800-X	Z16				26.0/1275	9,950 psi	Roll Crimp
Fio. 616	International	Two OB16 + one HCW16 card				19.5/1270	9,900 psi	Roll Crimp
Fio. 616	Longshot	Z16				32.0/1300	10,400 psi	Roll Crimp
Fio. 616	IMR SR-7625	Two NC16 + one HCW16 card				26.0/1225	9,500 psi	Roll Crimp
Remington: SP (Separate Plastic Base Wad)								
Fed. 209A	IMR PB	Rem. SP16	21.0/1200				11,200 psi	
Fed. 209A	IMR SR-7625	Rem. SP16		21.0/1250			11,200 psi	
Fed. 209A	IMR SR-4756	Rem. SP16			23.5/1300		11,000 psi	
Fed. 209A	IMR 800-X	Rem. SP16				24.0/1350	11,100 psi	
Rem. 209P	Green Dot	BP DX16				17.5/1165	9,700 psi	#1
Rem. 209P	Green Dot	WAA16				16.5/1165	10,200 psi	
Rem. 209P	Herco	BP DX16	21.0/1220	21.4/1245	21.7/1260	22.0/1275	9,800 psi	#1
Rem. 209P	Herco	BP SG16	21.0/1220	21.4/1245	21.7/1260	22.0/1275	9,800 psi	#2
Rem. 209P	Herco	WAA16	21.0/1220	21.3/1240	21.7/1260	22.0/1275	1,600 psi	
Rem. 209P	Unique	BP DX16	19.5/1165	20.5/1220	20.8/1250	20.8/1250	10,200 psi	#1
Rem. 209P	Unique	BP SG16	19.5/1165	20.5/1220	20.8/1250	20.8/1250	10,200 psi	#2
Rem. 209P	Unique	WAA16	19.0/1165	19.5/1195	20.0/1220	20.0/1220	10,200 psi	
Rem. 209P	IMR PB	Rem. SP16		20.0/1250			10,700 psi	
Rem. 209P	IMR SR-7625	Rem. SP16			23.5/1300		11,200 psi	
Rem. 209P	IMR SR-4756	Rem. SP16				29.0/1350	10,100 psi	
Rem. 209P	IMR 800-X	Rem. SP16				24.0/1350	11,100 psi	
Win. 209	WSF	BP DX16				20.6/1200	8,800 psi	#1
Win. 209	IMR PB	WAA16	19.0/1200				11,000 psi	
Win. 209	IMR SR-7625	WAA16			22.5/1300		11,200 psi	
Win. 209	IMR 800-X	WAA16			21.5/1300		11,000 psi	
Winchester: Compression-Formed AA Type								
CCI 209	W452AA	Rem. SP16				17.5/1165	10,500 LUP	
CCI 209	W473AA	Rem. SP16	20.0/1165	20.3/1185	20.7/1200	21.0/1220	9,000 LUP	
CCI 209	HS-6	WAA16	23.5/1165	23.8/1185	24.1/1200	24.5/1220	8,800 LUP	
CCI 209	HS-7	WAA16	25.0/1165	25.8/1185	26.0/1200	26.5/1220	9,100 LUP	
CCI 209	HS-7	WAA16	25.0/1165	25.5/1185	26.0/1200	26.5/1220	9,100 LUP	
CCI 209	W540	BP SG16				22.5/1180	8,800 psi	#2
CCI 209	W540	WAA16	23.5/1165	23.8/1185	24.2/1200	24.5/1220	9,000 psi	
CCI 209	W571	WAA16	25.0/1165	25.5/1185	26.0/1200	26.5/1220	9,100 psi	
CCI 209	WSF	WAA16				21.0/1220	8,800 psi	
Fed. 209	HS-6	WAA16	22.5/1165	23.0/1185	23.5/1200	24.0/1220	9,400 LUP	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

16-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type								
Fed. 209	HS-7	WAA16	25.0/1165	25.3/1185	25.6/1200	26.0/1220	9,200 LUP	
Fed. 209	W540	WAA16	22.5/1165	23.0/1185	23.5/1200	24.0/1220	9,500 psi	
Fed. 209	W571	WAA16	25.0/1165	25.3/1185	25.7/1200	26.0/1220	9,400 psi	
Fed. 209	WSF	WAA16				21.5/1220	8,600 psi	
Win. 209	Blue Dot	Rem. SP16				29.0/1275	9,300 psi	
Win. 209	Herco	BP SG16				20.0/1220	10,100 psi	#2
Win. 209	Herco	WAA16				20.0/1220	10,200 psi	
Win. 209	HS-6	WAA16	23.0/1165	23.3/1185	23.6/1200	24.0/1220	9,300 LUP	
Win. 209	Unique	BP SG16				19.0/1165	9,200 psi	#2
Win. 209	Unique	WAA16	19.0/1165	19.2/1185	19.4/1200	19.5/1220	10,500 psi	
Win. 209	Universal	BP G/BP	19.5/1165	19.8/1195	20.0/1220	21.0/1275	10,700 psi	
Win. 209	Universal	WAA16	19.0/1165	19.5/1195	20.0/1220	20.7/1275	11,000 psi	
Win. 209	W452AA	Rem. SP16				17.5/1165	10,300 LUP	
Win. 209	W473AA	Rem. SP16	20.5/1165	20.8/1185	21.2/1200	21.5/1220	8,800 LUP	
Win. 209	W540	WAA16	23.0/1165	23.3/1185	23.7/1200	24.0/1220	9,500 psi	
Win. 209	W571	WAA16	25.0/1165	25.5/1185	26.0/1200	26.5/1220	9,300 psi	
Win. 209	WSF	WAA16	20.0*/1165	20.3/1185	20.7/1200	21.0/1220	9,000 psi	#3
Win. 209	Longshot	Z16				25.0/1425	10,650 psi	OSC
Win. 209	IMR SR-7625	Z16				22.0/1300	10,200 psi	OSC
	Load Notes: #3 = This load duplicates ballistics of Winchester's 2 1/2 dram equivalent Promotional Field Load.							
Winchester: X-Pert Plastic								
Fed. 209A	IMR PB	WAA16		19.0/1250			11,200 psi	
Fed. 209A	IMR SR-7625	WAA16		20.5/1250			10,900 psi	
Fed. 209A	IMR SR-4756	Rem. SP16		22.5/1250			10,900 psi	
Fed. 209A	IMR 800-X	WAA16				22.5/1350	10,800 psi	
Rem. 209P	IMR PB	Rem. SP16		21.0/1250			10,800 psi	
Rem. 209P	IMR SR-7625	Rem. SP16			23.0/1300		11,200 psi	
Rem. 209P	IMR SR-4756	Rem. SP16				27.0/1350	9,900 psi	
Rem. 209P	IMR 800-X	Rem. SP16				24.0/1350	9,000 psi	
Win. 209	IMR PB	WAA16	19.0/1200				10,900 psi	
Win. 209	IMR SR-7625	WAA16		22.0/1250			11,000 psi	
Win. 209	IMR 800-X	WAA16				23.0/1350	11,000 psi	
2 3/4": 1 1/16 Ounce Lead Shot								
Federal: Plastic (Paper Base Wad)								
CCI 209	W540	BP SG16				22.6/1225	9,200 LUP	#1
Fiocchi: Plastic								
Fio. 616	W540	BP SG16				22.3/1200	9,100 psi	#1
Winchester: Compression-Formed AA Type								
CCI 209	W540	BP SG16				22.0/1180	9,000 psi	#1
Win. 209	W540	BP SG16				24.8/1200	10,800 psi	#1
	Load Notes: #1 = Sporting.							

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

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Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
2 3/4": 1 1/8 Ounce Lead Shot								
Ballistic Products: Multi-Hull								
Win. 209	Herco	Z16				23.0/1200	9,200 psi	Roll Crimp
Federal: Plastic (Paper Base Wad)								
CCI 209	IMR SR-7625	Rem. SP16				24.5/1295	9,900 LUP	
CCI 209M	IMR 800-X	Rem. SP16	20.5/1190	21.3/1220	22.0/1245	23.5/1290	10,000 LUP	
Fed. 209	IMR 800-X	Rem. SP16	20.0/1185	20.8/1210	21.2/1225	21.5/1230	9,500 LUP	
Fed. 209	Solo 1500	Rem. SP16				30.5/1190	9,500 LUP	
Fed. 209	IMR SR-7625	Rem. SP16				23.5/1190	8,300 LUP	
Fed. 209	IMR SR-7625	Rem. SP16				21.0/1190	8,900 LUP	
Fed. 209A	Blue Dot	Rem. SP16				32.0/1295	8,600 psi	
Fed. 209A	Green Dot	Rem. SP16				19.0/1185	10,600 psi	
Fed. 209A	Green Dot	WAA16				18.5/1185	10,200 psi	
Fed. 209A	Herco	Rem. SP16	22.0/1185	22.5/1205	23.0/1220	23.5/1240	10,100 psi	
Fed. 209A	Herco	Rem. SP16				24.5/1295	10,300 psi	
Fed. 209A	Herco	WAA16	22.0/1185	22.7/1205	23.4/1220	24.0/1240	10,200 psi	
Fed. 209A	Unique	Rem. SP16	21.5/1185	21.8/1205	22.1/1220	22.5/1240	9,600 psi	
Fed. 209A	Unique	WAA16	21.0/1185	21.3/1205	21.6/1220	22.0/1240	10,200 psi	
Rem. 209P	IMR PB	Rem. SP16	21.0/1200				10,500 psi	
Rem. 209P	IMR SR-7625	Rem. SP16	23.0/1200				9,000 psi	
Rem. 209P	IMR 800-X	Rem. SP16			24.5/1300		10,100 psi	
Win. 209	IMR PB	Rem. SP16	20.5/1200				10,500 psi	
Win. 209	IMR SR-7625	Rem. SP16		23.0/1250			10,800 psi	
Win. 209	IMR 800-X	Rem. SP16			22.5/1300		10,800 psi	
Fiocchi: Plastic								
Fio. 616	Blue Dot	Rem. SP16				31.0/1240	8,900 psi	
Fio. 616	Blue Dot	Rem. SP16				32.5/1295	9,200 psi	
Fio. 616	Herco	Rem. SP16	21.0/1185	21.8/1205	22.6/1200	23.5/1240	10,700 psi	
Fio. 616	Unique	Rem. SP16				20.5/1185	9,900 psi	
Fio. 616	Unique	WAA16				19.5/1185	10,600 psi	
Fio. 616	Longshot	MM16 (#2221680) + 1/4" felt 20				22.0/1300	11,200 psi	OSC
Fio. 616	Longshot	Z16				26.0/1390	10,300 psi	OSC
Fio. 616	Herco	Z16				23.0/1200	9,300 psi	Roll Crimp
Remington: SP (Separate Plastic Base Wad)								
Fed. 209A	IMR SR-4756	Rem. SP16	22.0/1175				10,900 psi	
Fed. 209A	IMR 800-X	Rem. SP16		19.0/1200			10,800 psi	
Rem. 209P	IMR SR-4756	Rem. SP16	24.0/1175				9,500 psi	
Rem. 209P	IMR 800-X	Rem. SP16				21.0/1225	10,900 psi	
Rem. 209P	Blue Dot	Rem. SP16				27.0/1240	9,900 psi	
Rem. 209P	Herco	WAA16				21.0/1185	10,600 psi	
Rem. 209P	Solo 1500	Rem. SP16				29.0/1260	10,500 LUP	
Rem. 209P	Unique	WAA16				20.0/1185	10,300 psi	
Rem. 209P	IMR SR-7625	Rem. SP16		22.0/1200			11,000 psi	
Win. 209	IMR SR-7625	Rem. SP16	21.0/1175				10,900 psi	
Win. 209	IMR SR-4756	Rem. SP16				23.5/1225	11,000 psi	
Win. 209	IMR 800-X	Rem. SP16				19.5/1225	10,900 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

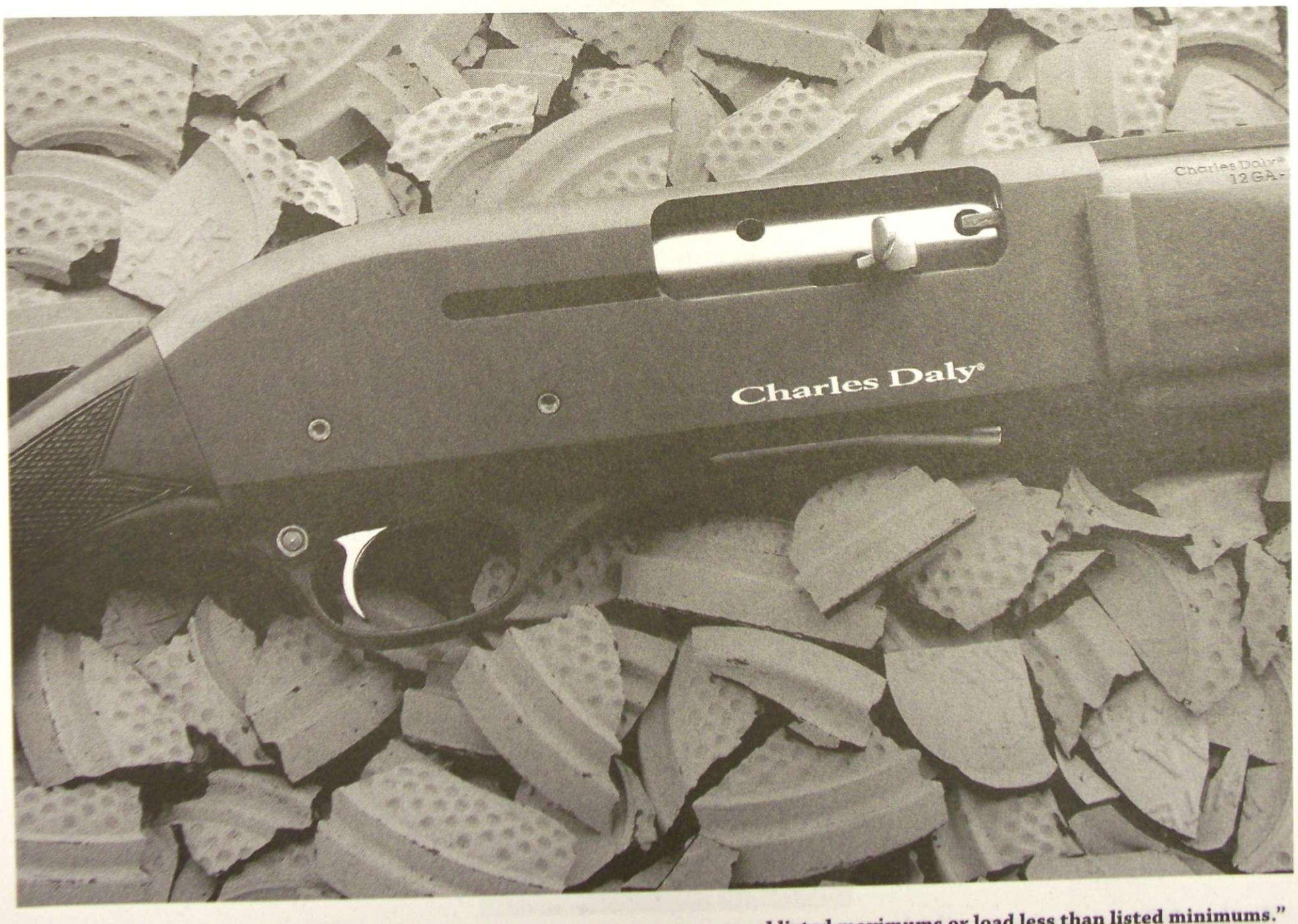
16-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type								
CCI 109	W540	Rem. SP16	26.5/1185	27.5/1240	28.0/1265	28.5/1290	9,600 LUP	
CCI 209	W540	WAA16				24.5/1185	10,400 psi	
CCI 209	W571	WAA16	26.0/1185	26.5/1205	27.0/1220	27.5/1240	10,800 psi	
CCI 209	WSF	WAA16				20.5/1185	10,800 psi	
CCI 209M	IMR 800-X	Rem. SP16				21.5/1240	9,600 LUP	
Fed. 209	HS-6	Rem. SP16	26.5/1185	26.7/1200	27.0/1215	27.5/1240	9,300 LUP	
Fed. 209	HS-6	WAA16				24.0/1185	10,400 LUP	
Fed. 209	HS-7	WAA16	25.5/1185	25.7/1200	26.0/1215	26.5/1240	10,600 LUP	
Fed. 209	IMR 800-X	Rem. SP16				20.0/1185	9,600 LUP	
Fed. 209	IMR SR-4756	Rem. SP16				23.0/1185	9,400 LUP	
Fed. 209	IMR SR-7625	Rem. SP16				20.5/1195	10,000 LUP	
Fed. 209	W571	WAA16				25.5/1185	10,200 psi	
Fed. 209	W571	WAA16				26.5/1240	10,900 psi	
Fed. 209	IMR 800-X	Rem. SP16				23.0/1285	10,300 LUP	
Rem. 209P	IMR 800-X	Rem. SP16				24.0/1290	8,500 LUP	
Win. 209	Blue Dot	Rem. SP16				27.0/1185	10,000 psi	
Win. 209	HS-6	Rem. SP16	26.5/1185	26.7/1200	27.0/1215	27.5/1240	9,400 LUP	
Win. 209	HS-6	WAA16				24.5/1185	10,600 LUP	
Win. 209	HS-7	WAA16	26.0/1185	26.2/1200	26.5/1215	27.0/1240	10,700 LUP	
Win. 209	IMR 800-X	Rem. SP16	20.0/1175	20.4/1190	20.8/1205	21.5/1235	9,800 LUP	
Win. 209	Solo 1500	Rem. SP16				29.0/1260	10,900 LUP	
Win. 209	IMR SR-4756	Rem. SP16				24.0/1190	9,000 LUP	
Win. 209	IMR SR-7625	Rem. SP16				21.0/1200	9,800 LUP	
Win. 209	W571	WAA16	26.0/1185	26.3/1205	26.7/1220	27.0/1240	10,900 psi	
Winchester: X-Pert Plastic								
Fed. 209A	IMR SR-4756	Rem. SP16	20.5/1150				10,800 psi	
Fed. 209A	IMR 800-X	Rem. SP16		19.0/1200			10,900 psi	
Rem. 209P	IMR SR-7625	Rem. SP16	19.5/1150				10,900 psi	
Rem. 209P	IMR SR-4756	Rem. SP16	23.0/1150				8,900 psi	
Rem. 209P	IMR 800-X	Rem. SP16			22.0/1250		10,100 psi	
Win. 209	IMR SR-7625	Rem. SP16	19.0/1150				10,900 psi	
Win. 209	IMR SR-4756	Rem. SP16		22.5/1200			11,100 psi	
Win. 209	IMR 800-X	Rem. SP16		20.0/1200			11,000 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

16-GAUGE

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
2 3/4": 1 1/4 Ounce Lead Shot								
Ballistic Products: 16 2A								
M209	Steel	MM16 + 18CW20 (in base wad)				27.0/1290	10,900 psi	OSC
Win. 209	Longshot	Z16				27.0/1210	9,733 psi	Roll Crimp
Federal: Plastic (Paper Base Wad)								
Fed. 209	Solo 1500	Rem. SP16				30.0/1260	10,000 LUP	
Fed. 209A	Blue Dot	Rem. SP16				28.0/1220	10,200 psi	
Fiocchi								
Fio. 616	Steel	MM16 (#2221680)				27.0/1350	11,200 psi	OSC
Fio. 616	Longshot	Z16				24.0/1290	10,600 psi	OSC
Fio. 616	Longshot	Z16				27.0/1215	9,900 psi	Roll Crimp
Winchester:Compression-Formed AA Type								
Win. 209	W571	Rem. SP16				30.5/1230	10,500 LUP	



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Chapter 15

12-GAUGE LOAD DATA

12-GAUGE-2″

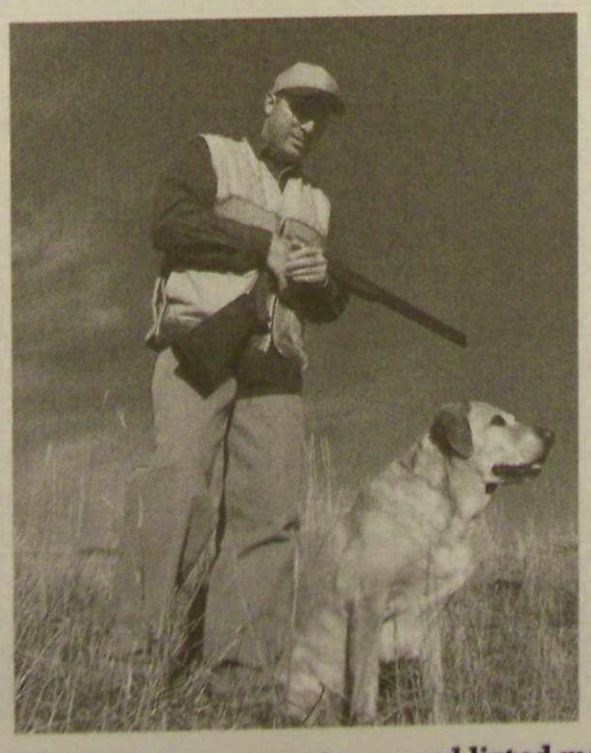
Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum	Powder Charge (grains)/ Velocity (fps) Maximum	Maximum Pressure	Load Notes
7/8 Ounce Lead Shot						
Remington: Premier & Nitro 27 and STS (Shortened by Cutting)						
Win. 209	International	BP Compact		16.0/1180	8,400 psi	#1
Winchester: Compression-Formed AA Type (Shortened by Cutting)						
Win. 209	International	BP Compact		16.0/1180	8,400 psi	#1
Load Notes: #1 = Ballistic Products Eurowad.						
1 Ounce Lead Shot						
Remington: Premier & Nitro 27 and STS (Shortened by Cutting)						
Win. 209	Universal	BP Ultra Short		18.5/1180	9,200 psi	#1
Load Notes: #1 = Ballistic Products Eurowad.						

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.5"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum		Maximum	Maximum Pressure	Load Notes
3/4 Ounce Lead Shot							
Fiocchi							
Fio. 616	Bullseye	(2)BPGA+BW12			22.0/1360	8,700 psi	COS12 seal
Fio. 616	Bullseye	X12X+BW12			22.0/1400	9,000 psi	COS12 seal
Winchester: Compression-Formed AA Type							
Win. 209	Bullseye	LB12			22.0/1345	8,500 psi	COS12 seal
7/8 Ounce Lead Shot							
Fiocchi							
Fio. 616	Bullseye	Two BPGS + CE			16.0/1200	8,000 psi	COS12 seal
Fio. 616	Bullseye	Two X12X + Two 1/2HCW			18.0/1270	8,400 psi	COS12 seal
Fio. 616	Bullseye	X12X + BW12			19.0/1300	9,000 psi	COS12 seal
Fio. 616	Titewad	Two 1/2HCW12			19.0/1210	8,000 psi	COS12 seal
Winchester: Compression-Formed AA Type							
Win. 209	Titewad	1/2HCW12 + 14C			18.0/1400	11,100 psi	COS12 seal
1 Ounce Lead Shot							
Federal: Gold Medal Plastic (Shortened by Cutting)							
Win. 209	International	WAA12			20.5/1200	8,200 psi	
Remington: Premier & Nitro 27 and STS (Shortened by Cutting)							
Win. 209	Universal	WAA12R			20.8/1180	7,300 psi	
Winchester: Compression-Formed AA Type (Shortened by Cutting)							
Win. 209	Universal	BP Compact			19.0/1130	8,900 psi	#1
Win. 209	Universal	WAA12R	20.0/1130	20.5/1190	22.0/1300	10,300 psi	

Load Notes: #1 = Ballistic Products Eurowad.



"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
1 Ounce Lead Shot								
Ballistic Products: Multi-Hull 12 2A.1								
CCI 209	Red Dot	Pisk-Piston Skeet				19.0/1140	9,100 psi	COS12 overshot
CCI 209	Red Dot	Pisk-Piston Skeet				19.0/1310	9,500 psi	COS12 overshot
CCI 209M	Red Dot	Pisk-Piston Skeet				19.0/1240	9,400 psi	COS12 overshot
Ch. 209	Titewad	Four NC12 + HCW12				19.0/1155	9,900 psi	Overshot Card
Ch. 209	Titewad	Four NC12 + HCW12				20.0/1200	10,200 psi	Overshot Card
Ch. 209	International	LB12-2				23.0/1345	9,200 psi	COS12 overshot
M209	American Select	Pisk-Piston Skeet				20.0/1200	7,850 psi	COS12 overshot
M209	Red Dot	Pisk-Piston Skeet				19.0/1195	8,400 psi	COS12 overshot
M209	IMR 700-X	Two HWC12				22.0/1285	9,400 psi	COS12 overshot
M209	Solo 1000	HCD24				22.0/1275	8,200 psi	COS12 overshot
W209	Clays	LB12-2				22.0/1335	10,700 psi	COS12 overshot
WIN209	American Select	Pisk-Piston Skeet				20.0/1225	8,500 psi	COS12 overshot
WIN209	Red Dot	Pisk-Piston Skeet				19.0/1220	8,600 psi	COS12 overshot
Federal: Gold Medal Plastic								
CCI 209	American Select	CS12S	19.5/1200	20.0/1220	20.2/1235	20.5/1255	10,600 psi	
CCI 209	American Select	BP Pisk	19.7/1200	20.3/1220	20.6/1280	21.3/1320	10,500 psi	#2
CCI 209	American Select	BP HCD24	20.5/1225	20.7/1245	20.8/1260	21.0/1270	9,200 psi	#3
CCI 209	American Select	SCAT	20.5/1220	21.0/1250	21.5/1270	22.0/1290	10,330 psi	#8
CCI 209	American Select	BP SRC	21.0/1245	21.5/1300	21.7/1320	22.0/1345	10,700 psi	#4
CCI 209	American Select	BP Z21	20.5/1225	20.7/1245	20.8/1255	21.0/1270	9,100 psi	#5
CCI 209	Bullseye	Fed. 12S0				19.0/1200	8,400 psi	
CCI 209	Clays	BP DX12	18.0/1200	18.5/1220	18.7/1235	19.0/1250	8,700 psi	#1
CCI 209	Clays	Pat.Ctr.Prpl.	18.4/1125	19.6/1180	20.7/1235	21.8/1290	7,000 LUP	
CCI 209	IMR 700-X	BP DX12				18.0/1150	7,200 LUP	#1
CCI 209	International	BP DX12	19.0/1180	19.2/1195	19.5/1210	20.0/1235	8,600 psi	#1
CCI 209	Nitro-100	Fed. 12S0	18.5/1200	19.0/1230	19.5/1260	20.0/1290	8,900 psi	#6
CCI 209	R. Scot D	Fed. 12S0	19.5/1200	20.2/1230	20.8/1260	21.5/1290		
CCI 209	Red Diamond	Claybuster	17.5/1180	18.1/1215	18.8/1250	19.5/1290	8,000 psi	#7
CCI 209	Red Diamond	Fed. 12S0	17.5/1180	18.1/1215	18.8/1250	19.5/1290	8,300 psi	#7
CCI 209	Red Diamond	Fed. 12S0	17.5/1180	18.1/1215	18.8/1250	19.5/1290	8,000 psi	#7
CCI 209	Red Diamond	L-29	17.5/1180	18.3/1215	19.1/1250	20.0/1290	7,600 psi	#7
CCI 209	Red Diamond	Rem. TGT12	17.0/1180	17.6/1215	18.3/1250	19.0/1290	7,600 psi	#7
CCI 209	Red Dot	Fed. 12S0				19.0/1200	7,600 psi	
CCI 209	Solo 1000	BP DX12	20.0/1220	20.2/1235	20.5/1250	21.0/1270	8,900 psi	#1
CCI 209	Solo 1000	Fed. 12S0	20.0/1200	20.7/1230	21.3/1260	22.0/1290	8,500 LUP	#6
CCI 209	WST	Fed. 12S0	21.0/1235	21.5/1255	21.9/1275	22.5/1290	9,500 psi	
CCI 209	American Select	BP DX12	20.0/1200	20.5/1240	21.0/1290	21.5/1320	10,600 psi	#1
CCI 209M	Nitro-100	Fed. 12S0	17.0/1200	17.7/1230	18.3/1260	19.0/1290	9,200 psi	#6
CCI 209M	R. Scot D	Fed. 12S0	19.5/1200	20.3/1230	21.2/1260	22.0/1290	10,100 psi	
CCI 209M	Red Diamond	Claybuster	17.5/1180	18.1/1215	18.8/1250	19.5/1290	8,200 psi	#7
CCI 209M	Red Diamond	Fed. 12S0	17.5/1180	18.1/1215	18.8/1250	19.5/1290	8,600 psi	#7
CCI 209M	Red Diamond	Fed. 12S0	17.5/1180	18.1/1215	18.8/1250	19.5/1290	8,200 psi	#7
CCI 209M	Red Diamond	L-29	17.0/1180	17.8/1215	18.6/1250	19.5/1290	8,300 psi	#7
CCI 209M	Red Diamond	Rem. TGT12	17.0/1180	17.6/1215	18.3/1250	19.0/1290	7,700 psi	#7
CCI 209M	Red Dot	Pat.Ctrl.Prpl.				18.0/1200	6,900 psi	
CCI 209M	Solo 1000	Fed. 12S0	19.0/1200	19.8/1230	20.7/1260	21.5/1290	9,100 LUP	#6
CCI 209SC	Clays	Pat.Ctrl.Prpl.	18.0/1180	18.6/1210	19.0/1235	20.0/1290	9,300 psi	
Fed. 209	Clays	Fed. 12S0	17.9/1125	18.9/1180	19.9/1235	20.9/1290	8,400 LUP	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Gold Medal Plastic								
Fed. 209	Promo	WAA12SL				18.0/1200		
Fed. 209	Promo	Claybuster 1100-12				18.0/1200		
Fed. 209	Promo	Fed. 12S0				19.0/1255		
Fed. 209	Promo	WAA12SL				18.5/1255		
Fed. 209	Promo	Claybuster 1100-12				18.5/1255		
Fed. 209	R. Scot D	Claybuster	20.0/1200	20.8/1230	21.7/1260	22.5/1290	8,600 psi	
Fed. 209	R. Scot D	Fed. 12S0	20.5/1200	21.2/1230	21.8/1260	22.5/1290	9,600 psi	
Fed. 209	R. Scot D	Fed. 12S3	20.0/1200	20.7/1230	21.3/1260	22.0/1290	10,200 psi	
Fed. 209	R. Scot D	Rem. Fig.-8	20.0/1200	20.8/1230	21.7/1260	22.5/1290	9,400 psi	
Fed. 209	R. Scot D	Rem. TGT12	20.0/1200	20.8/1230	21.7/1260	22.5/1290	9,900 psi	
Fed. 209	R. Scot D	WAA12	19.5/1200	20.3/1230	21.2/1260	22.0/1290	9,600 psi	
Fed. 209	R. Scot D	WAA12F1	20.5/1200	21.2/1230	21.8/1260	22.5/1290	9,200 psi	
Fed. 209	Scot 453	Fed. 12S0	20.0/1200	20.3/1230	20.7/1260	21.0/1290	9,900 psi	
Fed. 209	Solo 1000	Claybuster	19.5/1200	20.3/1230	21.2/1260	22.0/1290		
Fed. 209	Solo 1000	Fed. 12S0	20.0/1200	20.7/1230	21.3/1260	22.0/1290		
Fed. 209	Solo 1000	Fed. 12S3	19.5/1200	20.2/1230	20.8/1260	21.5/1290		
Fed. 209	Solo 1000	Rem. Fig.-8	19.5/1200	20.3/1230	21.2/1260	22.0/1290		
Fed. 209	Solo 1000	Rem. TGT12	19.5/1200	20.3/1230	21.2/1260	22.0/1290		
Fed. 209	Solo 1000	WAA12	19.0/1200	19.8/1230	20.7/1260	21.5/1290	8,800 LUP	#6
Fed. 209	Solo 1000	WAA12F1	20.0/1200	20.7/1230	21.3/1260	22.0/1290		
Fed. 209	WST	Fed. 12S0				23.0/1290	8,400 psi	
Fed. 209A	#2 Improved	Fed. 12S0	20.0/1200	20.7/1230	21.3/1260	22.0/1290	9,900 psi	#6
Fed. 209A	American Select	Claybuster	20.0/1200	20.5/1230	21.0/1260	21.5/1290	8,000 psi	
Fed. 209A	American Select	Fed. 12S0	19.5/1200	20.3/1230	21.2/1260	22.0/1290	8,500 psi	
Fed. 209A	American Select	Rem. TGT12	19.5/1200	20.2/1230	20.8/1260	21.5/1290	8,800 psi	
Fed. 209A	American Select	WAA12SL	19.5/1200	20.2/1230	20.8/1260	21.5/1290	8,800 psi	
Fed. 209A	Bullseye	Fed. 12S0				18.0/1200	7,600 psi	
Fed. 209A	Bullseye	Pat.Ctrl.Prpl.				19.0/1200	5,700 psi	
Fed. 209A	Bullseye	Rem. RXP12				17.5/1200	9,000 psi	#9
Fed. 209A	Bullseye	WAA12				17.5/1200	9,500 psi	#10
Fed. 209A	Bullseye	WAA12F1				18.5/1200	7,600 psi	#9
Fed. 209A	Clays	Fed. 12S0	16.8/1125	17.9/1180	19.3/1235	20.3/1290	10,800 psi	
Fed. 209A	Green Dot	BP DX12	20.0/1200	21.0/1225	21.2/1240	21.5/1255	8,500 psi	
Fed. 209A	Green Dot	Fed. 12S0				21.0/1200	7,100 psi	
Fed. 209A	Green Dot	Pat.Ctrl.Prpl.	20.5*/1200	21.2*/1230	21.9/1260	22.5/1290	8,300 psi	#9*
Fed. 209A	Green Dot	Rem. PT12				21.0/1200	6,100 psi	
Fed. 209A	Green Dot	Rem. RXP12				20.0/1200	7,600 psi	
Fed. 209A	Green Dot	Rem. TGT12	20.0/1200	20.8/1230	21.7/1260	22.5/1290	8,500 psi	
Fed. 209A	Green Dot	WAA12				21.0/1200	8,200 psi	#9
Fed. 209A	Green Dot	WAA12F1				20.0/1200	7,200 psi	
Fed. 209A	Green Dot	WAA12SL	20.0/1200	20.8/1230	21.7/1260	22.5/1290	9,000 psi	
Fed. 209A	IMR 700-X	CB 2100-12	15.0/1110	16.0/1155	17.0/1200	18.0/1245	7,900 psi	
Fed. 209A	IMR 700-X	Fed. 12S0	15.0/1110	16.0/1155	17.0/1195	18.5/1250	8,200 psi	
Fed. 209A	IMR 700-X	Rem. TGT12	15.0/1100	16.0/1145	17.0/1190	18.5/1255	8,100 psi	
Fed. 209A	IMR 700-X	WAA12SL	15.0/1100	16.0/1150	17.0/1195	18.5/1250	8,500 psi	
Fed. 209A	IMR PB	CB 1100-12	20.0/1100	21.5/1150	23.0/1205	24.0/1255	6,300 psi	
Fed. 209A	IMR PB	Fed. 12S3	19.5/1105	20.5/1145	22.0/1210	23.0/1260	7,100 psi	
Fed. 209A	IMR PB	Rem. TGT12	19.5/1105	20.5/1140	22.0/1195	24.0/1260	6,800 psi	
Fed. 209A	ImR PB	WAA12SL	18.0/1110	19.5/1155	21.0/1205	22.5/1255	7,600 psi	
Fed. 209A	Nitro-100	BP ITD	17.5/1200	18.0/1230	18.5/1260	19.0/1290	8,100 psi	#6
Fed. 209A	Nitro-100	Fed. 12S0	17.5/1200	17.8/1230	18.2/1260	18.5/1290	9,000 psi	#6
Fed. 209A	Nitro-100	Fed. 12S3	17.0/1200	17.7/1230	18.3/1260	19.0/1290	9,100 psi	#6

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Gold Medal Plastic								
Fed. 209A	Nitro-100	Rem. TGT12	17.0/1200	17.5/1230	18.0/1260	18.5/1290	8,700 psi	#6
Fed. 209A	Nitro-100	WAA12SL	17.0/1200	17.7/1230	18.3/1260	19.0/1290	9,000 psi	#6
Fed. 209A	Red Diamond	Claybuster	17.5/1180	18.1/1215	18.8/1250	19.5/1290	8,800 psi	#7
Fed. 209A	Red Diamond	Fed. 12SO	17.5/1180	18.1/1215	18.8/1250	19.5/1290	9,500 psi	#7
Fed. 209A	Red Diamond	L-29	17.0/1180	17.8/1215	18.6/1250	19.5/1290	8,500 psi	#7
Fed. 209A	Red Diamond	Rem. TGT12	17.0/1180	17.6/1215	18.3/1250	19.0/1290	8,200 psi	#7
Fed. 209A	Red Dot	BP DX12				19.5/1290	10,000 psi	#1
Fed. 209A	Red Dot	Fed. 12SO	18.0/1200	18.8/1230	19.7/1260	20.5/1290	10,300 psi	
Fed. 209A	Red Dot	Fed. 12SO				18.0/1200	7,900 psi	
Fed. 209A	Red Dot	Pat.Ctrl.Prpl.	18.0*/1200	19.5*/1255	20.1/1275	20.5/1290	9,300 psi	#9*
Fed. 209A	Red Dot	Pat.Ctrl.Prpl.				18.5/1200	6,900 psi	
Fed. 209A	Red Dot	Rem. PT12				18.5/1200	7,500 psi	
Fed. 209A	Red Dot	Rem. RXP12				18.0/1200	8,700 psi	#9
Fed. 209A	Red Dot	Rem. TGT12	18.0/1200	18.7/1230	19.3/1260	20.0/1290	9,100 psi	
Fed. 209A	Red Dot	WAA12				18.0/1200	8,500 psi	#9
Fed. 209A	Red Dot	WAA12F1				18.0/1200	8,400 psi	#9
Fed. 209A	Red Dot	WAA12SL	18.0/1200	18.7/1230	19.3/1260	20.0/1290	10,300 psi	
Fed. 209A	Solo 1000	BP ITD	19.0/1200	19.7/1230	20.3/1260	21.0/1290	8,500 LUP	#6
Fed. 209A	Solo 1000	Fed. 12SO	19.0/1200	19.7/1230	20.3/1260	21.0/1290	9,500 LUP	#6
Fed. 209A	Solo 1000	Fed. 12S3	19.0/1200	19.7/1230	20.3/1260	21.0/1290	9,200 LUP	#6
Fed. 209A	Solo 1000	Rem. Fig.-8	19.0/1200	19.7/1230	20.3/1260	21.0/1290	8,500 LUP	#6
Fed. 209A	Solo 1000	Rem. TGT12	18.5/1200	19.3/1230	20.2/1260	21.0/1290	8,700 LUP	#6
Fed. 209A	Solo 1000	WAA12SL	18.5/1200	19.3/1230	20.2/1260	21.0/1290	9,500 LUP	#6
Fed. 209A	IMR SR-7625	CB 2100-12	22.5/1090	23.5/1140	25.0/1200	26.0/1250	5,800 psi	
Fed. 209A	IMR SR-7625	Fed. 12S3	22.0/1090	23.5/1160	24.5/1210	25.5/1255	6,600 psi	
Fed. 209A	IMR SR-7625	Rem. TGT12	22.0/1100	23.0/1145	24.0/1190	25.5/1250	6,200 psi	
Fed. 209A	IMR SR-7625	WAA12SL	22.5/1105	23.5/1160	24.5/1210	25.5/1265	6,600 psi	
Fed. 209A	Alliant e3	Duster - Green				16.5/1200	8,310 psi	
Fed. 209A	Alliant e3	Rem. TGT12				17.0/1200	8,000 psi	
Fed. 209A	Alliant e3	Fed. 12SO				17.5/1200	9,040 psi	
Fed. 209A	Alliant e3	Rem. TGT12				18.0/1255	8,840 psi	
Fed. 209A	Alliant e3	Duster - Green				18.0/1255	9,710 psi	
Fed. 209A	Alliant e3	Fed. 12SO				18.5/1255	9,340 psi	
Fed. 209A	Alliant e3	Duster - Green				18.5/1290	10,035 psi	
Fed. 209A	Alliant e3	Rem. TGT12				19.0/1290	9,660 psi	
Fed. 209A	Alliant e3	Fed. 12SO				19.5/1300	10,070 psi	
Fio. 616	IMR 700-X	BP DX12				19.5/1250	9,600 LUP	#1
Fio. 616	Nitro-100	Fed. 12SO	17.0/1200	17.7/1230	18.3/1260	19.0/1290	9,300 psi	#6
Fio. 616	R. Scot D	Fed. 12SO	20.0/1200	20.8/1230	21.7/1260	22.5/1290	9,500 psi	
Fio. 616	Red Diamond	Claybuster	17.5/1180	18.1/1215	18.8/1250	19.5/1290	8,700 psi	#7
Fio. 616	Red Diamond	Fed. 12SO	17.5/1180	18.1/1215	18.8/1250	19.5/1290	9,700 psi	#7
Fio. 616	Red Diamond	Fed. 12SO	17.5/1180	18.1/1215	18.8/1250	19.5/1290	8,700 psi	#7
Fio. 616	Red Diamond	L-29	17.0/1180	17.8/1215	18.6/1250	19.5/1290	8,600 psi	#7
Fio. 616	Red Diamond	Rem. TGT12	17.0/1180	17.8/1215	18.3/1250	19.0/1290	8,200 psi	#7
Fio. 616	Red Dot	BP DX12				20.0/1260	9,800 LUP	#1
Fio. 616	Solo 1000	Fed. 12SO	19.5/1200	20.3/1230	21.2/1260	22.0/1290	9,500 LUP	#6
Rem. 209	Bullseye	Pat.Ctrl.Prpl.				18.5/1200	5,600 psi	
Rem. 209	Green Dot	Pat.Ctrl.Prpl.				20.5/1200	6,100 psi	
Rem. 209	Red Diamond	Claybuster	17.5/1180	18.1/1215	18.8/1250	19.5/1290	7,300 psi	#7
Rem. 209	Red Diamond	Fed. 12SO	17.5/1180	18.1/1215	18.8/1250	19.5/1290	9,000 psi	#7
Rem. 209	Red Diamond	Fed. 12SO	17.5/1180	18.1/1215	18.8/1250	19.5/1290	7,300 psi	#7
Rem. 209	Red Diamond	L-29	18.0/1180	18.6/1215	19.3/1250	20.0/1290	7,500 psi	#7
Rem. 209	Red Diamond	Rem. TGT12	18.0/1180	18.6/1215	19.3/1250	20.0/1290	7,400 psi	#7
Rem. 209	Red Dot	Pat.Ctrl.Prpl.				18.5/1200	7,200 psi	
Rem. 209P	Clays	Rem. TGT12	18.2/1125	19.2/1180	20.2/1235	21.2/1290	7,300 LUP	

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Gold Medal Plastic								
Rem. 209P	IMR 700-X	CB 2100-12	15.5/1095	16.5/1145	18.0/1200	19.5/1255	7,400 psi	
Rem. 209P	IMR 700-X	Fed. 12S0	15.0/1110	16.0/1145	18.0/1210	19.5/1250	8,000 psi	
Rem. 209P	IMR 700-X	Rem. TGT12	16.0/1110	17.0/1155	18.0/1195	19.5/1255	7,300 psi	
Rem. 209P	IMR 700-X	WAA12SL	15.5/1090	16.5/1150	17.5/1195	19.0/1260	8,400 psi	
Rem. 209P	IMR PB	CB 1100-12	21.0/1095	22.0/1140	23.5/1200	25.0/1255	5,600 psi	
Rem. 209P	IMR PB	Fed. 12S3	20.0/1105	21.0/1150	22.5/1210	23.5/1250	7,200 psi	
Rem. 209P	IMR PB	Rem. TGT12	20.5/1090	22.0/1160	23.0/1205	24.0/1250	6,300 psi	
Rem. 209P	IMR PB	WAA12SL	20.0/1095	21.5/1155	22.5/1195	24.0/1260	6,600 psi	
Rem. 209P	Nitro-100	Fed. 12S0	18.5/1200	19.0/1230	19.5/1260	20.0/1290	8,900 psi	#6
Rem. 209P	R. Scot D	Fed. 12S0	20.0/1200	20.8/1230	21.7/1260	22.5/1290	10,000 psi	
Rem. 209P	Solo 1000	Fed. 12S0	19.5/1200	20.3/1230	21.2/1260	22.0/1290	8,200 LUP	#6
Win. 209	Clays	WAA12SL	17.2/1125	18.2/1180	19.1/1235	20.0/1290	8,300 LUP	
Win. 209	IMR 700-X	BP DX12				20.0/1290	10,000 LUP	#1
Win. 209	IMR 700-X	CB 2100-12	15.5/1110	16.5/1160	17.5/1200	19.0/1260	8,100 psi	
Win. 209	IMR 700-X	Fed. 12S0	15.5/1105	16.5/1155	17.5/1200	18.5/1245	7,800 psi	
Win. 209	IMR 700-X	Rem. TGT12	15.5/1100	16.5/1145	17.5/1195	18.5/1245	7,800 psi	
Win. 209	IMR 700-X	WAA12SL	15.5/1105	16.5/1150	17.5/1200	18.5/1250	8,500 psi	
Win. 209	IMR PB	CB 1100-12	20.5/1100	21.5/1145	23.0/1205	24.5/1260	6,100 psi	
Win. 209	IMR PB	Fed. 12S3	19.5/1105	21.0/1155	22.5/1210	23.5/1250	6,900 psi	
Win. 209	IMR PB	Rem. TGT12	20.0/1110	21.0/1155	22.0/1205	23.5/1255	7,000 psi	
Win. 209	IMR PB	WAA12SL	19.5/1090	21.0/1150	22.5/1205	24.0/1265	6,700 psi	
Win. 209	Nitro-100	Fed. 12S0	17.5/1200	18.0/1230	18.5/1260	19.0/1290	9,100 psi	#6
Win. 209	R. Scot D	Fed. 12S0	20.0/1200	20.7/1230	21.3/1260	22.0/1290	10,100 psi	
Win. 209	Red Diamond	Claybuster	17.5/1180	18.1/1215	18.8/1250	19.5/1290	7,900 psi	#7
Win. 209	Red Diamond	Fed. 12S0	17.5/1180	18.1/1215	18.8/1250	19.5/1290	9,700 psi	#7
Win. 209	Red Diamond	L-29	17.0/1180	17.8/1215	18.6/1250	19.5/1290	8,200 psi	#7
Win. 209	Red Diamond	Rem. TGT12	17.0/1180	17.6/1215	18.3/1250	19.5/1290	7,600 psi	#7
Win. 209	Red Dot	Pat.Ctrl.Prpl.				18.5/1200	6,700 psi	
Win. 209	Solo 1000	Fed. 12S0	19.5/1200	20.2/1230	20.8/1260	21.5/1290	9,200 LUP	#6
Win. 209	IMR SR-7625	CB 2100-12	22.0/1095	23.5/1145	25.0/1195	26.5/1245	5,200 psi	
Win. 209	IMR SR-7625	Fed. 12S3	21.5/1110	22.5/1150	24.0/1210	25.5/1255	6,600 psi	
Win. 209	IMR SR-7625	Rem. TGT12	22.5/1105	23.5/1145	25.0/1205	26.0/1245	5,900 psi	
Win. 209	IMR SR-7625	WAA12SL	22.5/1105	23.5/1150	25.0/1210	26.0/1250	5,600 psi	
Win. 209	WST	BP DX12	22.0/1235	22.4/1255	22.8/1275	23.0/1290	9,300 psi	#1
Win. 209	WST	Fed. 12S0	20.5/1180	20.5/1180	22.6/1265	23.0/1290	9,300 psi	
Win. AATP	Clays	WAA12SL	16.8/1125	16.8/1125	19.0/1235	20.0/1290	9,800 psi	
Federal: Paper								
CCI 209	Bullseye	Fed. 12S0				18.5/1200	7,600 psi	
CCI 209	Red Diamond	Fed. 12S3	17.5/1180	18.1/1215	18.8/1250	19.5/1290	8,200 psi	#7
CCI 209	Red Diamond	Fiocchi TL1	18.0/1180	18.6/1215	19.3/1250	20.0/1290	8,200 psi	#7
CCI 209	Red Diamond	H. Versalite	17.5/1180	18.3/1215	19.1/1250	20.0/1290	8,500 psi	#7
CCI 209	Red Diamond	Hawk II	17.0/1180	18.0/1215	18.9/1250	20.0/1290	9,000 psi	#7
CCI 209	Red Diamond	WAA12	16.5/1180	17.6/1215	18.7/1250	20.0/1290	8,900 psi	#7
CCI 209	Red Dot	Fed. 12S0				19.0/1200	7,600 psi	
CCI 209M	Bullseye	Pat.Ctrl.Prpl.				18.0/1200	6,900 psi	
CCI 209M	Clays	Pat.Ctrl.Prpl.	18.0/1180	18.8/1210	19.5/1235	20.5/1290	9,800 psi	
CCI 209M	Green Dot	Fed.12S3				23.0/1290	7,800 psi	
CCI 209M	Nitro-100	Fed.12S3	17.5/1200	18.0/1230	18.5/1260	19.0/1290	7,900 psi	#6
CCI 209M	R. Scot D	Fed.12S3	19.5/1200	20.3/1230	21.2/1260	22.0/1290	10,700 psi	
CCI 209M	Red Diamond	Fed.12S3	17.5/1180	18.0/1215	18.5/1250	19.0/1290	8,800 psi	#7
CCI 209M	Red Diamond	Fiocchi TL1	17.5/1180	18.1/1215	18.8/1250	19.5/1290	8,600 psi	#7
CCI 209M	Red Diamond	H. Versalite	17.0/1180	17.8/1215	18.6/1250	19.5/1290	8,500 psi	#7
CCI 209M	Red Diamond	Hawk II	17.0/1180	18.0/1215	18.9/1250	20.0/1290	9,500 psi	#7
CCI 209M	Red Diamond	WAA12	16.5/1180	17.6/1215	18.7/1250	20.0/1290	8,900 psi	#7

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Gold Medal Plastic								
CCI 209M	Red Dot	Fed. 12S3				21.0/1290	8,700 psi	
CCI 209M	Red Dot	Pat.Ctrl.Prpl.				18.5/1200	6,600 psi	
CCI 209M	Solo 1000	Fed.12S3	19.0/1200	19.7/1230	20.3/1260	21.0/1290	9,000 psi	#6
CCI 209SC	Clays	Fed.12S3	18.6/1180	19.4/1210	20.0/1235	21.8/1290	10,700 psi	
CCI 209SC	Clays	Windjam. II	18.3/1180	18.8/1210	19.2/1235	21.0/1290	9,700 psi	
Fed. 209	R. Scot D	Fed.12S3	20.5/1200	21.3/1230	22.2/1260	23.0/1290	9,800 psi	
Fed. 209	R. Scot D	WAA12	21.0/1200	21.7/1230	22.3/1260	23.0/1290	9,500 psi	
Fed. 209	Scot 453	Fed.12S0	21.0/1200	21.7/1230	22.3/1260	23.0/1290	10,100 si	
Fed. 209	Solo 1000	Fed. 12S3	20.0/1200	20.8/1230	21.7/1260	22.5/1290		
Fed. 209	Solo 1000	WAA12	20.5/1200	21.2/1230	21.8/1260	22.5/1290		
Fed. 209A	Bullseye	Fed. 12S0				18.5/1200	7,800 psi	
Fed. 209A	Bullseye	Fed. 12S3				18.5/1200	8,500 psi	#9
Fed. 209A	Bullseye	H. Versalite				18.5/1200	8,500 psi	#9
Fed. 209A	Bullseye	Lage Uniwad				19.0/1200	8,600 psi	#9
Fed. 209A	Bullseye	Pat.Ctrl.Prpl.				19.0/1200	6,400 psi	
Fed. 209A	Bullseye	Rein. PT12				18.0/1200	6,200 psi	
Fed. 209A	Bullseye	Rein. PT12				18.5/1200	7,600 psi	#9
Fed. 209A	Bullseye	Rem. R12L				18.5/1200	7,800 psi	#9
Fed. 209A	Bullseye	WAA12				18.5/1200	8,700 psi	#9
Fed. 209A	Bullseye	WAA12F1				18.0/1200	7,500 psi	#9
Fed. 209A	Bullseye	Windjammer				19.0/1200	7,300 psi	#9
Fed. 209A	Clays	Fed. 12S0	18.0/1180	18.8/1210	19.5/1235	21.0/1290	10,900 psi	
Fed. 209A	Green Dot	Fed. 12S0				22.5/1290	9,200 psi	
Fed. 209A	Green Dot	Fed. 12S3				23.5/1290	9,400 psi	
Fed. 209A	Green Dot	Rem. R12L				21.5/1290	8,800 psi	
Fed. 209A	Nitro-100	Fed. 12S3	17.5/1200	18.2/1230	18.8/1260	19.5/1290	8,600 psi	#6
Fed. 209A	Nitro-100	WAA12	17.5/1200	18.0/1230	18.5/1260	19.0/1290	8,400 psi	#6
Fed. 209A	Red Diamond	Fed. 12S3	17.5/1180	18.0/1215	18.5/1250	19.0/1290	9,200 psi	#7
Fed. 209A	Red Diamond	Fiocchi TL1	17.0/1180	17.8/1215	18.6/1250	19.5/1290	9,100 psi	#7
Fed. 209A	Red Diamond	H. Versalite	17.0/1180	17.8/1215	18.6/1250	19.5/1290	8,900 psi	#7
Fed. 209A	Red Diamond	Haek II	17.0/1180	18.0/1215	18.9/1250	20.0/1290	10,400 psi	#7
Fed. 209A	Red Diamond	WAA12	16.5/1180	17.6/1215	18.7/1250	20.0/1290	9,600 psi	#7
Fed. 209A	Red Dot	Fed. 12S0				20.5/1290	10,400 psi	
Fed. 209A	Red Dot	Fed. 12S0				19.0/1200	8,000 psi	
Fed. 209A	Red Dot	Fed. 12S3				20.5/1290	9,000 psi	
Fed. 209A	Red Dot	Fed. 12S3				18.5/1200	7,400 psi	
Fed. 209A	Red Dot	H. Versalite				18.0/1200	7,300 psi	
Fed. 209A	Red Dot	Lage Uniwad				19.0/1200	7,100 psi	
Fed. 209A	Red Dot	Pat.Ctrl.Prpl.				19.0/1200	7,100 psi	
Fed. 209A	Red Dot	Rein. PT12				18.0/1200	7,500 psi	
Fed. 209A	Red Dot	Rein. RXP12				19.0/1200	7,200 psi	
Fed. 209A	Red Dot	Rem. R12L				20.0/1290	9,300 psi	
Fed. 209A	Red Dot	Rem. R12L				18.5/1200	7,100 psi	
Fed. 209A	Red Dot	WAA12				18.5/1200	7,800 psi	
Fed. 209A	Red Dot	WAA12F1				18.5/1200	8,100 psi	#9
Fed. 209A	Red Dot	Windjammer				19.0/1200	7,400 psi	#9
Fed. 209A	Solo 1000	Fed. 12S3	19.0/1200	19.7/1230	20.3/1260	21.0/1290	9,000 psi	#6
Fed. 209A	Solo 1000	WAA12	19.0/1200	19.5/1230	20.0/1260	20.5/1290	7,500 psi	#6
Fed. 209A	Alliant e3	Fed. 12S0				17.5/1200	8,535 psi	
Fed. 209A	Alliant e3	Fed. 12C1				18.0/1250	9,375 psi	
Fed. 209A	Alliant e3	Fed. 12S0				18.5/1255	10,065 psi	
Fed. 209A	Alliant e3	Fed. 12S0				19.5/1290	10,630 psi	
Fio. 616	Nitro-100	Fed. 12S3	17.5/1200	18.0/1230	18.5/1260	19.0/1290	8,100 psi	#6
Fio. 616	R. Scot D	Fed. 12S3	20.5/1200	21.2/1230	21.8/1260	22.5/1290	9,700 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Paper								
Fio. 616	Red Diamond	Fed. 12S3	17.5/1180	18.0/1215	18.5/1250	19.0/1290	9,100 psi	#7
Fio. 616	Red Diamond	Fiocchi TL1	17.5/1180	18.1/1215	18.8/1250	19.5/1290	9,100 psi	#7
Fio. 616	Red Diamond	H. Versalite	17.0/1180	17.8/1215	18.6/1250	19.5/1290	8,900 psi	#7
Fio. 616	Red Diamond	Hawk II	17.0/1180	18.0/1215	18.9/1250	20.0/1290	9,400 psi	#7
Fio. 616	Red Diamond	WAA12	16.5/1180	17.6/1215	18.7/1250	20.0/1290	9,300 psi	#7
Fio. 616	Solo 1000	Fed. 12S3	19.0/1200	19.7/1230	20.3/1260	21.0/1290	8,600 psi	#6
Rem. 209	Bullseye	Pat.Ctrl.Prpl.				18.5/1200	6,200 psi	
Rem. 209	Red Diamond	Fed. 12S3	17.5/1180	18.1/1215	18.8/1250	19.5/1290	7,900 psi	#7
Rem. 209	Red Diamond	Fiocchi TL1	18.0/1180	18.6/1215	19.3/1250	20.0/1290	8,500 psi	#7
Rem. 209	Red Diamond	H. Versalite	17.5/1180	18.3/1215	19.1/1250	20.0/1290	7,900 psi	#7
Rem. 209	Red Diamond	Hawk II	17.0/1180	18.0/1215	18.9/1250	20.0/1290	8,700 psi	#7
Rem. 209	Red Diamond	WAA12	16.5/1180	17.6/1215	18.7/1250	20.0/1290	8,900 psi	#7
Rem. 209	Red Dot	Pat.Ctrl.Prpl.				18.0/1200	7,800 psi	
Rem. 209P	Clays	Rem. TGT12	18.5/1180	19.3/1210	20.0/1235	22.0/1290	7,700 psi	
Win. 209	Bullseye	Pat.Ctrl.Prpl.				19.0/1200	7,100 psi	
Win. 209	Clays	WAA12SL	17.5/1180	18.3/1210	19.0/1235	21.0/1290	10,800 psi	
Win. 209	Clays	Windjammer	18.0/1180	18.8/1210	19.5/1235	20.5/1290	8,800 psi	
Win. 209	Nitro-100	Fed. 12S3	17.5/1200	18.0/1230	18.5/1260	19.0/1290	8,600 psi	#6
Win. 209	R. Scot D	Fed. 12S3	20.5/1200	21.3/1230	22.2/1260	23.0/1290	9,500 psi	
Win. 209	Red Diamond	Fed. 12S3	17.5/1180	18.0/1215	18.5/1250	19.0/1290	8,600 psi	#7
Win. 209	Red Diamond	Fiocchi TL1	17.5/1180	18.1/1215	18.8/1250	19.5/1290	8,500 psi	#7
Win. 209	Red Diamond	H. Versalite	17.0/1180	17.8/1215	18.6/1250	19.5/1290	9,100 psi	#7
Win. 209	Red Diamond	Hawk II	17.0/1180	18.0/1215	18.9/1250	20.0/1290	9,800 psi	#7
Win. 209	Red Diamond	WAA12	16.5/1180	17.6/1215	18.7/1250	20.0/1290	9,100 psi	#7
Win. 209	Red Dot	Pat.Ctrl.Prpl.				19.0/1200	7,200 psi	
Win. 209	Solo 1000	Fed. 12S3	19.0/1200	19.7/1230	20.3/1260	21.0/1290	8,300 psi	#6
Federal: Plastic (Paper Base Wad)								
Fed. 209A	Green Dot	Fed. 12S3				23.0/1290	7,500 psi	
Fed. 209A	Green Dot	Rem. R12L				22.5/1290	7,400 psi	
Fed. 209A	Red Dot	Fed. 12S3				21.0/1290	9,400 psi	
Fed. 209A	Red Dot	Rem. R12L				20.5/1290	8,500 psi	
Fiocchi: Plastic (Low Base Wad)								
Fio. 616	American Select	BP DX12	20.0/1200	20.5/1230	20.7/1245	21.0/1270	10,300 psi	#1
Fio. 616	American Select	BP Pisk	19.8/1200	20.1/1220	20.4/1240	20.7/1260	10,400 psi	#2
Fio. 616	American Select	BP HCD24	20.5/1230	20.7/1245	20.8/1255	21.0/1270	9,300 psi	#3
Fio. 616	American Select	SCAT	21.5/1245	21.7/1265	21.8/1275	22.0/1290	10,400 psi	#8
Fio. 616	American Select	BP Z21	20.5/1230	20.7/1245	20.8/1255	21.0/1270	9,400 psi	#5
Fio. 616	Clays	BP DX12	18.0/1200	18.6/1220	19.0/1250	19.5/1290	9,300 psi	#1
Fio. 616	Green Dot	BP DX12	20.2/1200	21.2/1235	22.2/1270	22.6/1300	9,300 psi	#1
Fio. 616	IMR 700-X	BP DX12	18.5/1210	18.8/1235	19.1/1260	19.5/1290	9,900 LUP	#1
Fio. 616	International	BP DX12	19.6/1200	20.0/1220	20.5/1250	21.0/1290	9,800 psi	#1
Fio. 616	Red Dot	BP DX12				19.2/1285	9,900 psi	#1
Fio. 616	Solo 1000	BP DX12	19.5/1200	20.5/1240	21.5/1270	22.0/1290	7,800 psi	#1
Fio. 616	WSL	BP DX12	20.5/1260	20.8/1270	21.2/1285	21.5/1300	9,600 LUP	#1
Fio. 616	WST	BP DX12	21.1/1215	21.6/1215	22.0/1230	22.4/1255	9,200 psi	#1
Fiocchi: Purple Target (High Base Wad)								
CCI 209	Red Diamond	BP ITD	17.5/1180	18.5/1215	19.4/1250	20.5/1290	8,500 psi	#7
CCI 209	Red Diamond	Fed. 12S0	18.0/1180	19.0/1215	19.9/1250	21.0/1290	8,000 psi	#7
CCI 209	Red Diamond	Fiocchi TL1	17.0/1180	17.6/1215	18.3/1250	19.0/1290	7,300 psi	#7

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Fiocchi: Purple Target (High Base Wad)								
CCI 209	Red Diamond	Pat.Ctrl.Prpl.	17.5/1180	18.5/1215	19.4/1250	20.5/1290	7,700 psi	#7
CCI 209M	Clays	Pat.Ctrl.Prpl.	18.0/1180	18.6/1210	19.1/1235	19.9/1290	9,400 psi	
CCI 209M	International	Pat.Ctrl.Prpl.	19.6/1180	20.1/1210	20.5/1235	21.6/1290	8,200 psi	
CCI 209M	Nitro-100	Fed. 12SO	17.0/1200	17.5/1230	18.0/1260	18.5/1290	8,900 psi	#11
CCI 209M	R. Scot D	Fed. 12SO	19.5/1200	20.2/1230	20.8/1260	21.5/1290	10,700 psi	
CCI 209M	Red Diamond	BP ITD	17.0/1180	18.0/1215	18.9/1250	20.0/1290	8,700 psi	#7
CCI 209M	Red Diamond	Fed. 12SO	17.5/1180	18.5/1215	19.4/1250	20.5/1290	8,600 psi	#7
CCI 209M	Red Diamond	Fiocchi TL1	17.0/1180	17.6/1215	18.3/1250	19.0/1290	8,600 psi	#7
CCI 209M	Red Diamond	Pat.Ctrl.Prpl.	17.0/1180	18.1/1215	19.2/1250	20.5/1290	7,100 psi	#7
CCI 209M	Solo 1000	Fed. 12SO	19.0/1200	19.7/1230	20.3/1260	21.0/1290	9,500 LUP	#11
CCI 209SC	Clays	WAA12SL	18.0/1180	18.1/1195	18.3/1210	18.5/1235	9,500 psi	
CCI 209SC	International	WAA12SL	19.5/1180	20.6/1210	21.5/1235	22.5/1290	9,400 psi	
Fed. 209	R. Scot D	Fed. 12SO	20.0/1200	20.8/1230	21.7/1260	22.5/1290	8,900 psi	
Fed. 209	Solo 1000	Fed. 12SO	19.5/1200	20.3/1230	21.2/1260	22.0/1290		
Fed. 209A	Clays	Rem. TGT12	17.5/1180	18.1/1210	18.5/1235	19.7/1290	9,700 psi	
Fed. 209A	International	Rem. TGT12	19.3/1180	19.9/1210	20.3/1235	20.9/1290	8,800 psi	
Fed. 209A	Nitro-100	Fed. 12SO	17.0/1200	17.5/1230	18.0/1260	18.5/1290	10,300 psi	#11
Fed. 209A	Red Diamond	BP ITD	17.0/1180	17.8/1215	18.6/1250	19.5/1290	8,900 psi	#7
Fed. 209A	Red Diamond	Fed. 12SO	17.0/1180	18.0/1215	18.9/1250	20.0/1290	9,400 psi	#7
Fed. 209A	Red Diamond	Fiocchi TL1	17.0/1180	17.6/1215	18.3/1250	19.0/1290	9,600 psi	#7
Fed. 209A	Red Diamond	Pat.Ctrl.Prpl.	17.0/1180	18.0/1215	18.9/1250	20.0/1290	9,200 psi	#7
Fio. 616	#2 Improved	Fed. 12SO	19.0/1200	19.5/1230	20.0/1260	20.5/1290	10,900 psi	#11
Fio. 616	American Select	CS12S	20.0/1220	20.3/1225	20.7/1235	21.0/1240	10,800 psi	
Fio. 616	American Select	BP HCDP	20.2/1200	20.5/1220	20.7/1235	21.0/1260	9,100 psi	#12
Fio. 616	American Select	BP SRC	21.0/1270	21.5/1310	21.7/1325	22.0/1350	10,700 psi	#4
Fio. 616	American Select	BP Zero	19.3/1210	20.3/1255	20.8/1275	21.3/1295	8,800 psi	
Fio. 616	Clays	BP DX12	17.7/1200	18.4/1220	18.5/1235	18.6/1250	8,900 psi	#1
Fio. 616	Green Dot	BP DX12	20.0/1200	20.8/1255	21.5/1250	22.0/1270	9,000 psi	#1
Fio. 616	Green Dot	Fed. 12SO				20.0/1200	8,100 psi	
Fio. 616	Green Dot	Pat.Ctrl.Prpl.	20.0/1200	21.0/1230	22.0/1260	23.0/1290	8,400 psi	
Fio. 616	Green Dot	Rem. TGT 12	20.0/1200	20.8/1230	21.7/1260	22.5/1290	8,600 psi	
Fio. 616	Green Dot	WAA12SL	20.0/1200	20.8/1230	21.7/1260	22.5/1290	9,400 psi	
Fio. 616	IMR 700-X	BP DX12	18.2/1210	18.6/1235	18.9/1260	19.2/1290	9,900 LUP	#1
Fio. 616	International	BP DX12	19.1/1200	19.7/1220	19.9/1235	20.2/1250	9,300 psi	#1
Fio. 616	Nitro-100	Fed. 12SO	17.0/1200	17.5/1230	18.0/1260	18.5/1290	9,900 psi	#11
Fio. 616	R. Scot D	Fed. 12SO	19.5/1200	20.3/1230	21.2/1260	22.0/1290	9,500 psi	
Fio. 616	Red Diamond	BP ITD	17.0/1180	17.8/1215	18.6/1250	19.5/1290	8,700 psi	#7
Fio. 616	Red Diamond	Fed. 12SO	17.0/1180	18.1/1215	19.2/1250	20.5/1290	10,000 psi	#7
Fio. 616	Red Diamond	Fiocchi TL1	17.0/1180	17.6/1215	18.3/1250	19.0/1290	9,300 psi	#7
Fio. 616	Red Diamond	Pat.Ctrl.Prpl.	17.0/1180	18.0/1215	18.9/1250	20.0/1290	7,600 psi	#7
Fio. 616	Red Dot	BP DX12				19.0/1285	9,900 psi	#1
Fio. 616	Red Dot	Fed. 12SO				18.0/1200	9,100 psi	
Fio. 616	Red Dot	Pat.Ctrl.Prpl.	18.0/1200	19.0/1230	20.0/1260	21.0/1290	9,800 psi	
Fio. 616	Red Dot	Rem. TGT 12	18.0/1200	18.8/1230	19.7/1260	20.5/1290	10,100 psi	
Fio. 616	Red Dot	WAA12SL	18.0/1200	18.8/1230	19.7/1260	20.5/1290	10,300 psi	
Fio. 616	Scot 453	Fiocchi TL1	19.0/1200	19.5/1230	20.0/1260	20.5/1290	10,900 psi	
Fio. 616	Solo 1000	BP DX12	19.2/1200	19.7/1230	20.7/1250	21.8/1290	7,800 psi	#1
Fio. 616	Solo 1000	Fed. 12SO	19.0/1200	19.8/1230	20.7/1260	21.5/1290	9,000 LUP	#11
Fio. 616	WSL	BP DX12				20.2/1260	9,200 LUP	#1
Fio. 616	WST	BP DX12	21.0/1200	21.4/1215	21.8/1230	22.1/1255	9,200 psi	#1
Rem. 209	Red Diamond	BP ITD	17.5/1180	18.3/1215	19.1/1250	20.0/1290	8,100 psi	#7
Rem. 209	Red Diamond	Fed. 12SO	18.0/1180	19.0/1215	19.9/1250	21.0/1290	7,800 psi	#7
Rem. 209	Red Diamond	Fiocchi TL1	17.0/1180	17.6/1215	18.3/1250	19.0/1290	7,600 psi	#7
Rem. 209P	Nitro-100	Fed. 12SO	17.0/1200	17.5/1230	18.0/1260	18.5/1290	8,800 psi	#11

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Fiocchi: Purple Target (High Base Wad)								
Rem. 209P	R. Scot D	Fed. 12S0	20.5/1200	21.2/1230	21.8/1260	22.5/1290	8,400 psi	
Rem. 209P	Solo 1000	Fed. 12S0	20.0/1200	20.7/1230	21.3/1260	22.0/1290	7,600 LUP	#11
Rem. 209P	Clays	WAA12SL	17.1/1180	17.9/1210	18.5/1235	19.3/1290	10,600 psi	
Win. 209	International	WAA12SL	19.0/1180	19.6/1210	20.0/1235	21.1/1290	9,600 psi	
Win. 209	Nitro-100	Fed. 12S0	17.0/1200	17.5/1230	18.0/1260	18.5/1290	8,800 psi	#11
Win. 209	R. Scot D	Fed. 12S0	20.0/1200	20.8/1230	21.7/1260	22.5/1290	9,400 psi	
Win. 209	Red Diamond	BP ITD	17.0/1180	17.8/1215	18.6/1250	19.5/1290	8,700 psi	#7
Win. 209	Red Diamond	Fed. 12S0	17.0/1180	18.0/1215	18.9/1250	20.0/1290	9,300 psi	#7
Win. 209	Red Diamond	Fiocchi TL1	17.0/1180	17.6/1215	18.3/1250	19.0/1290	9,400 psi	#7
Win. 209	Red Diamond	Pat.Ctrl.Prpl.	17.0/1180	18.0/1215	18.9/1250	20.0/1290	8,900 psi	#7
Win. 209	Solo 1000	Fed. 12S0	19.5/1200	20.3/1230	21.2/1260	22.0/1290	7,800 LUP	#11
Remington: STS, Nitro 27 or Gun Club Plastic Shells								
CCI 209	Clays	Pat.Ctrl.Prpl.	17.1/1125	18.3/1180	19.5/1235	20.7/1290	8,400 LUP	
CCI 209	International	Pat.Ctrl.Prpl.	20.6/1180	21.2/1215	21.8/1250	22.7/1290	8,300 LUP	
CCI 209	Nitro-100	Rem. Fig.-8	16.5/1200	17.0/1230	17.5/1260	18.0/1290	6,700 psi	#11
CCI 209	Nitro-100	Rem. TGT12	16.5/1200	17.0/1230	17.5/1260	18.0/1290	10,200 psi	#11
CCI 209	R. Scot D	Rem. Fig.-8	19.5/1200	20.2/1230	20.8/1260	21.5/1290	9,500 psi	
CCI 209	R. Scot D	Rem. TGT12	19.5/1200	20.2/1230	20.8/1260	21.5/1290	10,300 psi	
CCI 209	Red Diamond	Hawk II	16.5/1180	17.1/1215	17.8/1250	18.5/1290	10,300 psi	#7
CCI 209	Red Diamond	Pat.Ctrl.Prpl.	16.5/1180	17.3/1215	18.1/1250	19.0/1290	8,600 psi	#7
CCI 209	Red Diamond	Rem. Fig.-8	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,200 psi	#7
CCI 209	Red Diamond	Rem. TGT12	16.5/1180	17.1/1215	17.8/1250	18.5/1290	8,800 psi	#7
CCI 209	Red Diamond	WAA12SL	16.5/1180	17.3/1215	18.1/1250	19.0/1290	10,000 psi	#7
CCI 209	Solo 1000	Rem. Fig.-8	19.0/1200	19.7/1230	20.3/1260	21.0/1290	9,000 LUP	#11
CCI 209	Solo 1000	Rem. Fig.-8	19.0/1200	19.7/1230	20.3/1260	21.0/1290		
CCI 209	Solo 1000	Rem. TGT12	19.0/1200	19.7/1230	20.3/1260	21.0/1290	9,000 LUP	#11
CCI 209	WSL	Fed. 12S0				21.0/1290	10,300 psi	
CCI 209	WSL	WAA12SL				20.5/1290	10,800 psi	
CCI 209	WST	Fed. 12S0	18.5/1180	19.5/1235	20.1/1265	20.5/1290	10,800 psi	
CCI 209	WST	WAA12SL	19.0/1180	20.0/1235	20.5/1265	21.0/1290	10,100 psi	
CCI 209M	Bullseye	Rem. Fig.-8				17.0/1200	8,300 psi	
CCI 209M	Green Dot	Rem. Fig.-8				18.5/1200	7,700 psi	
CCI 209M	Green Dot	Rem. R12L				22.0/1290	9,100 psi	
CCI 209M	R. Scot D	Rem. Fig.-8				21.0/1290	10,400 LUP	
CCI 209M	R. Scot D	Rem. TGT12				21.0/1290	10,700 LUP	
CCI 209M	Red Diamond	Hawk II	16.5/1180	17.1/1215	17.8/1250	18.5/1290	10,500 psi	#7
CCI 209M	Red Diamond	Pat.Ctrl.Red	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,100 psi	#7
CCI 209M	Red Diamond	Rem. Fig.-8	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,600 psi	#7
CCI 209M	Red Diamond	Rem. TGT12	16.5/1180	17.1/1215	17.8/1250	18.5/1290	8,700 psi	#7
CCI 209M	Red Diamond	WAA12SL	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,700 psi	#7
CCI 209M	Red Dot	Rem. Fig.-8				17.5/1200	8,900 psi	
CCI 209M	Red Dot	Rem. R12L				20.0/1290	10,300 psi	
CCI 209M	Solo 1000	Rem. Fig.-8				20.5/1290	9,700 LUP	#11
CCI 209M	Solo 1000	Rem. TGT12				20.5/1290	10,500 LUP	#11
CCI 209SC	Clays	Rem. TGT12	15.7/1125	17.8/1180	18.8/1235	20.5/1290	11,100 psi	
CCI 209SC	International	Rem. TGT12	19.5/1180	20.8/1235	22.2/1290	22.8/1345	10,300 psi	
Fed. 209	Bullseye	Rem. Fig.-8				17.5/1200	7,500 psi	
Fed. 209	Clays	Fed. 12S0	16.5/1125	17.7/1180	18.9/1250	20.0/1290	10,100 LUP	
Fed. 209	Green Dot	Rem. Fig.-8				20.0/1200	7,200 psi	
Fed. 209	Green Dot	Rem. R12L				22.5/1290	9,200 psi	
Fed. 209	International	Fed. 12S0	19.6/1180	20.2/1210	20.6/1235	22.3/1290	9,300 LUP	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: STS, Nitro 27 or Gun Club Plastic Shells								
Fed. 209	R. Scot D	Rem. Fig.-8	19.0/1200	19.8/1230	20.7/1260	21.5/1290	10,300 psi	
Fed. 209	R. Scot D	Rem. TGT12	19.0/1200	19.8/1230	20.7/1260	21.5/1290	10,600 psi	
Fed. 209	Red Dot	Rem. Fig.-8				18.0/1200	8,400 psi	
Fed. 209	Red Dot	Rem. R12L				20.5/1290	10,500 psi	
Fed. 209	Solo 1000	Rem. Fig.-8	18.5/1200	19.3/1230	20.2/1260	21.0/1290		
Fed. 209	Solo 1000	Rem. TGT12	18.5/1200	19.3/1230	20.2/1260	21.0/1290		
Fed. 209	WSL	Fed. 12S0				21.0/1290	9,700 psi	
Fed. 209	WSL	WAA12SL				20.5/1290	10,100 psi	
Fed. 209	WST	Fed. 12S0	19.0/1180	20.0/1235	20.6/1265	21.0/1290	10,900 psi	
Fed. 209	WST	WAA12SL	19.0/1180	20.5/1235	21.1/1265	21.5/1290	9,700 psi	
Fed. 209A	IMR 700-X	CB 1100-12	14.5/1090	16.0/1160	17.0/1205	18.0/1250	9,600 psi	
Fed. 209A	IMR 700-X	Fed. 12S3	14.5/1090	15.5/1140	17.0/1210	18.0/1250	11,200 psi	
Fed. 209A	IMR 700-X	BP HDCP				18.0/1260	10,200 psi	#12
Fed. 209A	IMR 700-X	Rem. TGT12	14.5/1100	15.5/1150	16.5/1205	17.5/1245	10,000 psi	
Fed. 209A	IMR 700-X	WAA12SL	14.5/1105	15.5/1150	16.5/1200	18.0/1260	10,800 psi	
Fed. 209A	IMR PB	CB 1100-12	18.5/1095	20.0/1155	21.0/1195	22.5/1255	8,000 psi	
Fed. 209A	IMR PB	Fed. 12S3	18.0/1100	19.0/1140	20.5/1200	22.0/1260	9,300 psi	
Fed. 209A	IMR PB	BP HDCP				22.0/1250	9,200 psi	#12
Fed. 209A	IMR PB	Rem. TGT12	18.5/1105	19.5/1145	21.0/1200	22.5/1255	8,200 psi	
Fed. 209A	IMR PB	WAA12SL	18.0/1115	19.0/1150	20.5/1200	22.0/1255	8,900 psi	
Fed. 209A	International	Fed. 12S0	18.0/1180	18.7/1210	19.3/1235	21.0/1290	11,300 psi	
Fed. 209A	Nitro-100	Rem. Fig.-8	16.0/1200	16.7/1230	17.3/1260	18.0/1290	10,200 psi	#11
Fed. 209A	Nitro-100	Rem. TGT12	16.0/1200	16.7/1230	17.3/1260	18.0/1290	10,900 psi	#11
Fed. 209A	Red Diamond	Hawk II	16.5/1180	17.1/1215	17.8/1250	18.5/1290	10,800 psi	#7
Fed. 209A	Red Diamond	Pat.Ctrl.Red	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,600 psi	#7
Fed. 209A	Red Diamond	Rem. Fig.-8	16.5/1180	17.1/1215	17.8/1250	18.5/1290	10,100 psi	#7
Fed. 209A	Red Diamond	Rem. TGT12	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,600 psi	#7
Fed. 209A	Red Diamond	WAA12SL	16.5/1180	17.1/1215	17.8/1250	18.5/1290	10,100 psi	#7
Fed. 209A	IMR SR 7625	CB 1100-12	20.5/1090	22.0/1150	23.0/1195	24.5/1255	7,400 psi	
Fed. 209A	IMR SR 7625	Fed. 12S3	20.0/1095	21.0/1140	22.5/1205	23.5/1250	8,300 psi	
Fed. 209A	IMR SR 7625	BP HDCP				23.5/1245	8,200 psi	#12
Fed. 209A	IMR SR 7625	Rem. TGT12	20.5/1095	22.0/1160	23.0/1200	24.0/1245	7,400 psi	
Fed. 209A	IMR SR 7625	WAA12SL	19.0/1095	20.5/1150	22.0/1205	23.5/1260	8,500 psi	
Fio. 615	IMR 700-X	BP HDCP	18.4/1245	19.1/1260	19.4/1270	19.8/1280	10,200 LUP	#12
Fio. 616	Red Diamond	Hawk II	16.5/1180	17.1/1215	17.8/1250	18.5/1290	10,600 psi	#7
Fio. 616	Red Diamond	Pat.Ctrl.Red	16.5/1180	17.3/1215	18.1/1250	19.0/1290	9,400 psi	#7
Fio. 616	Red Diamond	Rem. Fig.-8	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,900 psi	#7
Fio. 616	Red Diamond	Rem. TGT12	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,200 psi	#7
Fio. 616	Red Diamond	WAA12SL	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,600 psi	#7
Rem. 209	American Select	BP Zero	18.3/1200	19.8/1255	20.3/1275	20.9/1200	9,200 psi	
Rem. 209	Red Diamond	Hawk II	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,900 psi	#7
Rem. 209	Red Diamond	Pat.Ctrl.Red	16.5/1180	17.1/1215	17.8/1250	18.5/1290	8,700 psi	#7
Rem. 209	Red Diamond	Rem. Fig-8	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,100 psi	#7
Rem. 209	Red Diamond	Rem. TGT12	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,000 psi	#7
Rem. 209	Red Diamond	WAA12SL	16.5/1180	17.3/1215	18.1/1250	19.0/1290	9,900 psi	#7
Rem. 209	Scot 453	Rem. TGT12	20.0/1200	20.5/1230	21.0/1260	21.5/1290	10,900 psi	
Rem. 209	WSL	BP HDCP				20.5/1290	10,100 psi	#12
Rem. 209P	Alliant e3	WAA12L (gray)				15.5/1150	8,950 psi	
Rem. 209P	Alliant e3	Claybuster 1100-12				16.0/1150	7,730 psi	
Rem. 209P	Alliant e3	Rem. TGT12				16.0/1150	7,970 psi	
Rem. 209P	Alliant e3	WAA12SL				16.5/1200	10,015 psi	
Rem. 209P	Alliant e3	Rem. TGT12				16.9/1200	8,550 psi	

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: STS, Nitro 27 or Gun Club Plastic Shells								
Rem. 209P	Alliant e3	Claybuster 1100-12				17.0/1200	8,730 psi	
Rem. 209P	Alliant e3	Duster - Green				17.0/1200	9,455 psi	
Rem. 209P	Alliant e3	Fed. 12S0				17.2/1200	9,585 psi	
Rem. 209P	Alliant e3	Rem. TGT12				18.0/1250	9,710 psi	
Rem. 209P	Alliant e3	WAA12SL				17.5/1255	10,530 psi	
Rem. 209P	Alliant e3	Duster - Green				17.5/1255	10,970 psi	
Rem. 209P	Alliant e3	Claybuster 1100-12				18.0/1255	9,540 psi	
Rem. 209P	Alliant e3	Fed. 12S0				18.3/1255	10,330 psi	
Rem. 209P	Alliant e3	Claybuster 1100-12				19.0/1290	10,040 psi	
Rem. 209P	Alliant e3	Rem. TGT12				19.0/1290	10,850 psi	
Rem. 209P	#2 Improved	Rem. TGT12	19.0/1200	19.5/1230	20.0/1260	20.5/1290	10,900 psi	#11
Rem. 209P	American Select	Claybuster	19.5/1200	20.5/1230	21.5/1260	22.5/1290	8,500 psi	
Rem. 209P	American Select	CS12S		19.0/1220	19.2/1230	19.5/1245	10,600 psi	
Rem. 209P	American Select	BP DX12		19.5/1200	19.7/1210	20.0/1220	10,700 psi	#1
Rem. 209P	American Select	BP DX12		19.5/1200	19.8/1210	20.0/1220	10,700 psi	#1
Rem. 209P	American Select	Fed. 12S0	19.5/1200	20.2/1230	20.8/1260	21.5/1290	9,900 psi	
Rem. 209P	American Select	Fisk		19.5/1200	19.7/1220	20.3/1245	11,200 psi	#2
Rem. 209P	American Select	Rem. TGT12	19.0/1200	20.2/1230	21.3/1260	22.5/1290	8,700 psi	
Rem. 209P	American Select	WAA12SL	19.0/1200	19.8/1230	20.7/1260	21.5/1290	9,200 psi	
Rem. 209P	Bullseye	Fed. 12S0				17.5/1200	7,800 psi	
Rem. 209P	Bullseye	H. Versalite				17.0/1200	7,500 psi	
Rem. 209P	Bullseye	Pat.Ctrl.Prpl.				18.0/1200	6,900 psi	
Rem. 209P	Bullseye	Rem. Fig.-8				17.0/1200	7,100 psi	
Rem. 209P	Bullseye	WAA12F1				17.5/1200	6,900 psi	
Rem. 209P	Clays	Rem. TGT12	16.8/1125	17.9/1180	18.9/1235	19.9/1290	8,800 LUP	
Rem. 209P	Green Dot	Fed. 12S0	19.5/1200	20.3/1230	21.2/1260	22.0/1290	8,700 psi	
Rem. 209P	Green Dot	Fed. 12S0				19.5/1200	7,200 psi	
Rem. 209P	Green Dot	H. Versalite				20.0/1200	6,600 psi	
Rem. 209P	Green Dot	Pat.Ctrl.Prpl.	20.5/1200	21.2/1230	21.8/1260	22.5/1290	8,200 psi	
Rem. 209P	Green Dot	Pat.Ctrl.Prpl.				20.5/1200	6,200 psi	
Rem. 209P	Green Dot	Rem. Fig.-8				22.0/1290	8,100 psi	
Rem. 209P	Green Dot	Rem. Fig.-8				20.0/1200	6,500 psi	
Rem. 209P	Green Dot	Rem. TGT12	20.0/1200	20.8/1230	21.7/1260	22.5/1290	8,400 psi	
Rem. 209P	Green Dot	WAA12F1				23.0/1290	7,200 psi	
Rem. 209P	Green Dot	WAA12F1				19.0/1200	6,200 psi	
Rem. 209P	Green Dot	WAA12SL	19.5/1200	20.5/1230	21.5/1260	22.5/1290	9,000 psi	
Rem. 209P	IMR 700-X	CB 1100-12	15.0/1105	16.0/1150	17.0/1195	18.5/1260	9,400 psi	
Rem. 209P	IMR 700-X	Fed. 12S3	14.5/1090	15.5/1140	17.0/1205	18.0/1250	10,600 psi	
Rem. 209P	IMR 700-X	BP HCDP				18.0/1205	9,600 psi	#12
Rem. 209P	IMR 700-X	Rem. TGT12	14.5/1090	15.5/1140	16.5/1190	18.0/1250	9,500 psi	
Rem. 209P	IMR 700-X	WAA12SL	14.5/1100	15.5/1145	16.5/1195	18.0/1255	10,500 psi	
Rem. 209P	IMR PB	CB 1100-12	19.5/1100	20.5/1150	21.5/1190	23.0/1250	7,200 psi	
Rem. 209P	IMR PB	Fed. 12S3	18.5/1095	20.0/1155	21.0/1200	22.5/1260	8,500 psi	
Rem. 209P	IMR PB	BP HCDP				22.5/1260	8,600 psi	#12
Rem. 209P	IMR PB	Rem. TGT12	19.0/1110	20.0/1150	21.5/1210	22.5/1250	7,600 psi	
Rem. 209P	IMR PB	WAA12SL	18.0/1095	19.5/1150	20.5/1190	22.5/1265	8,700 psi	
Rem. 209P	International	Rem. TGT12	20.2/1180	20.6/1210	20.9/1235	21.4/1290	8,900 LUP	
Rem. 209P	Nitro-100	Claybuster	16.0/1200	16.7/1230	17.3/1260	18.0/1290	10,100 psi	#11
Rem. 209P	Nitro-100	Rem. Fig.-8	16.5/1200	17.0/1230	17.5/1260	18.0/1290	9,300 psi	#11
Rem. 209P	Nitro-100	Rem. TGT12	16.5/1200	17.0/1230	17.5/1260	18.0/1290	10,100 psi	#11

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: STS, Nitro 27 or Gun Club Plastic Shells								
Rem. 209P	Nitro-100	WAA12SL	16.0/1200	16.5/1230	17.0/1260	17.5/1290	10,200 psi	#11
Rem. 209P	Promo	Rem. TGT12				18.0/1200		
Rem. 209P	Promo	Claybuster 1100-12				18.0/1200		
Rem. 209P	Promo	Purple PC				18.5/1200		
Rem. 209P	Promo	Rem. TGT12				19.0/1255		
Rem. 209P	Promo	Claybuster 1100-12				19.5/1255		
Rem. 209P	Promo	Purple PC				19.5/1255		
Rem. 209P	R. Scot D	Claybuster	19.0/1200	19.7/1230	20.3/1260	21.0/1290	10,900 psi	
Rem. 209P	R. Scot D	Rem. Fig.-8	19.5/1200	20.2/1230	20.8/1260	21.5/1290	9,600 psi	
Rem. 209P	R. Scot D	Rem. TGT12	19.5/1200	20.2/1230	20.8/1260	21.5/1290	9,800 psi	
Rem. 209P	R. Scot D	WAA12	18.5/1200	19.3/1230	20.2/1260	21.0/1290	10,900 psi	
Rem. 209P	R. Scot D	WAA12F1	19.5/1200	20.2/1230	20.8/1260	21.5/1290	10,200 psi	
Rem. 209P	Red Dot	Fed. 12S0	18.0/1200	18.7/1230	19.3/1260	20.0/1290	10,500 psi	
Rem. 209P	Red Dot	Fed. 12S0				18.0/1200	8,800 psi	
Rem. 209P	Red Dot	H. Versalite				17.5/1200	8,600 psi	
Rem. 209P	Red Dot	Pat.Ctrl.Prpl.	18.5/1200	19.2/1230	19.8/1260	20.5/1290	9,100 psi	
Rem. 209P	Red Dot	Pat.Ctrl.Prpl.				18.5/1200	7,700 psi	
Rem. 209P	Red Dot	Rem. Fig.-8				21.5/1290	9,100 psi	
Rem. 209P	Red Dot	Rem. Fig.-8				18.0/1200	8,400 psi	
Rem. 209P	Red Dot	Rem. R12L				20.5/1290	9,900 psi	
Rem. 209P	Red Dot	Rem. TGT12	18.0/1200	19.0/1230	20.0/1260	21.0/1290	10,700 psi	
Rem. 209P	Red Dot	WAA12F1				20.5/1290	9,100 psi	
Rem. 209P	Red Dot	WAA12F1				18.0/1200	7,800 psi	
Rem. 209P	Red Dot	WAA12SL	18.0/1200	18.8/1230	19.7/1260	20.5/1290	10,400 psi	
Rem. 209P	Solo 1000	Claybuster	18.5/1200	19.2/1230	19.8/1260	20.5/1290	10,300 LUP	#11
Rem. 209P	Solo 1000	Rem. Fig.-8	19.0/1200	19.7/1230	20.3/1260	21.0/1290	9,300 LUP	#11
Rem. 209P	Solo 1000	Rem. TGT12	19.0/1200	19.7/1230	20.3/1260	21.0/1290	9,500 LUP	#11
Rem. 209P	Solo 1000	WAA12	18.0/1200	18.8/1230	19.7/1260	20.5/1290	10,500 LUP	#11
Rem. 209P	Solo 1000	WAA12F1	19.0/1200	19.7/1230	20.3/1260	21.0/1290		
Rem. 209P	Solo 1250	Rem. TGT12				16.5/1200	8,400 LUP	#11
Rem. 209P	IMR SR-7625	CB 1100-12	22.0/1110	23.0/1155	24.0/1200	25.0/1250	5,900 psi	
Rem. 209P	IMR SR-7625	Fed. 12S3	20.0/1105	21.0/1140	22.5/1190	24.0/1260	7,800 psi	
Rem. 209P	IMR SR-7625	BP HCP				24.0/1260	7,800 psi	#12
Rem. 209P	IMR SR-7625	Rem. TGT12	21.5/1110	22.5/1155	23.5/1195	25.0/1255	7,000 psi	
Rem. 209P	IMR SR-7625	WAA12SL	21.0/1100	22.0/1150	23.0/1195	23.0/1195	8,100 psi	
Win. 209	Bullseye	Rem. Fig.-8				17.5/1200	7,900 psi	
Win. 209	Clays	BP HCDP	16.5/1160	17.5/1200	18.5/1235	19.0/1255	10,000 LUP	#12
Win. 209	Clays	WAA12SL	15.7/1125	17.0/1180	18.4/1235	19.8/1290	10,700 LUP	
Win. 209	Clays	Windjammer II	15.4/1125	16.0/1180	17.8/1235	19.5/1290	11,300 psi	
Win. 209	Green Dot	Rem. Fig.-8				20.0/1200	7,100 psi	
Win. 209	Green Dot	Rem. R12L				22.0/1290	8,700 psi	
Win. 209	IMR 700-X	CB 1100-12	15.0/1095	16.0/1150	17.0/1195	18.0/1240	9,200 psi	
Win. 209	IMR 700-X	Fed. 12S3	14.5/1090	15.5/1135	17.0/1210	18.0/1255	11,100 psi	
Win. 209	IMR 700-X	BP HCDP				17.5/1250	10,400 psi	#12
Win. 209	IMR 700-X	Rem. TGT12	15.0/1110	15.5/1140	16.5/1195	18.0/1255	9,800 psi	
Win. 209	IMR 700-X	WAA12SL	15.0/1110	16.0/1160	17.0/1205	18.0/1250	10,300 psi	
Win. 209	IMR PB	CB 1100-12	19.5/1105	20.5/1150	21.5/1195	23.0/1250	7,100 psi	
Win. 209	IMR PB	Fed. 12S3	19.0/1110	20.0/1150	21.0/1195	22.5/1255	8,700 psi	
Win. 209	IMR PB	BP HCDP				22.5/1260	8,600 psi	#12
Win. 209	IMR PB	Rem. TGT12	19.0/1100	20.0/1145	21.0/1190	22.5/1255	7,700 psi	
Win. 209	IMR PB	WAA12	18.5/1100	19.5/1140	21.0/1195	22.5/1255	8,100 psi	

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: STS, Nitro 27 or Gun Club Plastic Shells								
Win. 209	International	BP HCDP	19.0/1200	19.3/1210	19.6/1220	20.0/1235	8,000 LUP	#12
Win. 209	International	WAA12SL	18.4/1180	19.2/1210	20.1/1235	21.0/1290	10,000 LUP	
Win. 209	Nitro-100	Rem. Fig.-8	16.0/1200	16.7/1230	17.3/1260	18.0/1290	9,200 psi	#11
Win. 209	Nitro-100	Rem. TGT12	16.0/1200	16.7/1230	17.3/1260	18.0/1290	9,900 psi	#11
Win. 209	R. Scot D	Rem. Fig.-8	19.0/1200	19.8/1230	20.7/1260	21.5/1290	9,500 psi	
Win. 209	R. Scot D	Rem. TGT12	19.5/1200	20.2/1230	20.8/1260	21.5/1290	10,300 psi	
Win. 209	Red Diamond	Hawk II	16.5/1180	17.1/1215	17.8/1250	18.5/1290	10,400 psi	#7
Win. 209	Red Diamond	Pat.Ctrl.Red	16.5/1180	17.3/1215	18.1/1250	19.0/1290	9,400 psi	#7
Win. 209	Red Diamond	Rem. Fig.-8	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,700 psi	#7
Win. 209	Red Diamond	Rem. TGT12	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,200 psi	#7
Win. 209	Red Diamond	WAA12SL	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,800 psi	#7
Win. 209	Red Dot	Rem. Fig.-8				18.0/1200	7,100 psi	
Win. 209	Red Dot	Rem. R12L				20.0/1290	10,100 psi	
Win. 209	Solo 1000	Rem. Fig.-8	18.5/1200	19.3/1230	20.2/1260	21.0/1290	9,600 LUP	#11
Win. 209	Solo 1000	Rem. TGT12	19.0/1200	19.7/1230	20.3/1260	21.0/1290	9,300 LUP	#11
Win. 209	IMR SR-7625	CB 1100-12	21.0/1090	22.5/1150	24.0/1195	25.5/1250	5,900 psi	
Win. 209	IMR SR-7625	Fed. 12S3	21.0/1100	22.0/1145	23.0/1195	24.0/1250	7,900 psi	
Win. 209	IMR SR-7625	BP HCDP				24.0/1250	7,800 psi	#12
Win. 209	IMR SR-7625	Rem. TGT12	21.0/1105	22.0/1145	23.0/1190	24.5/1260	7,100 psi	
Win. 209	IMR SR-7625	WAA12SL	20.0/1105	21.5/1150	23.0/1200	24.0/1250	7,200 psi	
Win. 209	WSL	Fed. 12S0				21.0/1290	9,800 psi	
Win. 209	WSL	WAA12SL				20.5/1290	10,100 psi	
Win. 209	WST	Fed. 12S0	19.0/1180	20.0/1235	20.6/1265	21.0/1290	9,700 psi	
Win. 209	WST	BP HCDP	19.0/1180	19.5/1230	20.0/1250	20.5/1290	9,900 psi	#12
Win. 209	WST	WAA12SL	19.5/1235	20.3/1260	20.6/1275	21.0/1290	10,000 psi	
Win. AATP	Clays	WAA12SL	15.5/1125	16.5/1180	17.3/1210	18.2/1235	11,000 psi	
Win. AATP	International	WAA12SL	18.5/1180	19.2/1210	19.7/1235	21.0/1290	10,500 psi	
Remington: Unibody (Integral Plastic Base Wad)								
CCI 157	W 452AA	Fed. 12S				23.5/1290	10,200 LUP	
CCI 157	W 452AA	Rem. R12L				23.5/1290	9,700 LUP	
CCI 157	W 452AA	WAA12				23.5/1290	9,800 LUP	
CCI 209	Green Dot	Rem. R12L				23.5/1290	8,100 psi	
CCI 209	Red Dot	Rem. R12L				21.0/1290	9,700 psi	
CCI 209M	Green Dot	Rem. R12L				22.5/1290	8,100 psi	
CCI 209M	Red Dot	Rem. R12L				20.0/1290	10,600 psi	
Fed. 209	Green Dot	Rem. R12L				22.0/1290	9,600 psi	
Fed. 209	Red Dot	Rem. R12L				19.5/1290	10,400 psi	
Rem. 209	Green Dot	Rem. R12L				22.0/1290	9,200 psi	
Rem. 209	Green Dot	Rem. RXP12				21.0/1290	9,900 psi	
Rem. 209	Green Dot	WAA12				21.0/1290	9,900 psi	
Win. 209	Green Dot	Rem. R12L				21.5/1290	8,800 psi	
Win. 209	Red Dot	Rem. R12L				20.0/1290	10,700 psi	
Remington: RXP								
Rem. 209	IMR 700-X	BP HCDP	16.5/1200	16.7/1210	16.8/1220	17.0/1230	8,200 LUP	#12
Win. 209	W 452AA	Fed. 12S1				22.5/1290	10,300 LUP	
Win. 209	W 452AA	Rem. R12L				22.5/1290	10,100 LUP	
Win. 209	W 452AA	WAA12				22.5/1290	10,300 LUP	

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type								
CCI 209	American Select	BP DX12				19.5/1225	9,700 psi	#1
CCI 209	American Select	BP Pisk	19.1/1220	19.3/1230	19.4/1235	19.6/1240	10,100 psi	#2
CCI 209	American Select	BP HCDP	20.5/1210	20.7/1230	20.8/1240	21.0/1260	10,200 psi	#12
CCI 209	Bullseye	Pat.Ctrl.Prpl.				18.0/1200	7,300 psi	
CCI 209	Clays	Rem. TGT12	16.6/1125	17.7/1180	18.7/1235	19.8/1290	9,500 LUP	
CCI 209	Green Dot	Pat.Ctrl.Prpl.				21.0/1200	6,300 psi	
CCI 209	International	WAA12SL	19.2/1180	20.0/1210	20.6/1235	22.3/1290	8,800 LUP	
CCI 209	Nitro-100	H. Versalite				19.0/1275		
CCI 209	Nitro-100	WAA12	16.5/1200	17.2/1230	17.8/1260	18.5/1290	10,300 psi	#11
CCI 209	R. Scot D	WAA12	19.0/1200	19.8/1230	20.7/1260	21.5/1290	10,800 psi	
CCI 209	Red Diamond	Claybuster	17.0/1180	17.8/1215	18.6/1250	19.5/1290	7,600 psi	#7
CCI 209	Red Diamond	H. Versalite	16.5/1180	17.5/1215	18.4/1250	19.5/1290	8,800 psi	#7
CCI 209	Red Diamond	Hawk II	17.5/1180	18.1/1215	18.8/1250	19.5/1290	10,000 psi	#7
CCI 209	Red Diamond	WAA12	17.0/1180	17.8/1215	18.6/1250	19.5/1290	7,600 psi	#7
CCI 209	Red Diamond	WAA12SL				19.5/1290	7,600 psi	#7
CCI 209	Red Dot	Pat.Ctrl.Prpl.				18.5/1200	7,800 psi	
CCI 209	Solo 1000	WAA12	18.5/1200	19.2/1230	19.8/1260	20.5/1290	9,400 psi	#11
CCI 209	W 452AA	WAA12SL	20.0/1180	21.5/1235	22.3/1265	23.0/1290	7,800 LUP	
CCI 209	WSL	Fed. 12S0				21.0/1290	10,400 psi	
CCI 209	WSL	WAA12L				21.5/1325	10,700 psi	
CCI 209	WSL	WAA12SL				21.0/1290	9,400 psi	
CCI 209	WST	Fed. 12S0	19.0/1180	20.5/1235	21.1/1265	21.5/1290	9,500 psi	
CCI 209	WST	WAA12L	21.0/1255	21.5/1270	22.0/1300	22.5/1325	10,200 psi	
CCI 209	WST	WAA12SL	21.5/1235	21.8/1250	22.1/1265	22.5/1290	7,900 psi	
CCI 209M	Bullseye	Pat.Ctrl.Prpl.				17.5/1200	7,900 psi	
CCI 209M	Green Dot	Pat.Ctrl.Prpl.				19.0/1200	6,600 psi	
CCI 209M	Green Dot	WAA12				21.5/1290	9,900 psi	
CCI 209M	Nitro-100	WAA12	16.0/1200	16.7/1230	17.3/1260	18.0/1290	10,700 psi	#11
CCI 209M	R. Scot D	WAA12	18.5/1200	19.2/1230	19.8/1260	20.5/1290	10,500 psi	
CCI 209M	Red Diamond	Claybuster	16.5/1180	17.1/1215	17.8/1250	18.5/1290	8,700 psi	#7
CCI 209M	Red Diamond	H. Versalite	16.5/1180	17.3/1215	18.1/1250	19.0/1290	9,700 psi	#7
CCI 209M	Red Diamond	Hawk II	17.0/1180	17.6/1215	18.3/1250	19.0/1290	10,400 psi	#7
CCI 209M	Red Diamond	WAA12	16.5/1180	17.1/1215	17.8/1250	18.5/1290	8,700 psi	#7
CCI 209M	Red Diamond	WAA12SL	17.0/1180	17.6/1215	18.3/1250	19.0/1290	9,200 psi	#7
CCI 209M	Red Dot	Pat.Ctrl.Prpl.				17.5/1200	8,500 psi	
CCI 209M	Red Dot	WAA12				18.5/1290	10,400 psi	
CCI 209M	Red Dot	WAA12				17.5/1200	9,900 psi	
CCI 209M	Solo 1000	WAA12	18.0/1200	18.5/1230	19.0/1260	19.5/1290	9,900 psi	#11
CCI 209SC	Clays	Rem. TGT12	15.2/1125	16.6/1180	17.5/1235	19.2/1290	11,000 psi	
CCI 209SC	International	WAA12SL	19.0/1180	19.6/1210	20.0/1235	21.0/1290	10,000 psi	
Fed. 209	Bullseye	Pat.Ctrl.Prpl.				17.5/1200	7,600 psi	
Fed. 209	Green Dot	Pat.Ctrl.Prpl.				19.0/1200	7,200 psi	
Fed. 209	International	Pat.Ctrl.Prpl.	20.6/1180	21.5/1210	22.2/1235	23.2/1290	7,400 LUP	
Fed. 209	Nitro-100	H. Versalite	17.0/1200	17.7/1225	18.3/1250	19.0/1275		
Fed. 209	Nitro-100	WAA12	17.0/1200	17.5/1225	18.0/1250	18.5/1275		
Fed. 209	R. Scot D	WAA12	19.0/1200	19.7/1230	20.3/1260	21.0/1290	10,200 psi	
Fed. 209	Red Dot	Pat.Ctrl.Prpl.				17.5/1200	8,900 psi	
Fed. 209	Solo 1000	WAA12	18.5/1200	19.2/1230	19.8/1260	20.5/1290		
Fed. 209	W 452AA	WAA12SL	20.0/1180	21.5/1235	22.3/1265	23.0/1290	7,800 LUP	
Fed. 209	WSL	Fed. 12S0				21.5/1290	9,600 psi	
Fed. 209	WSL	WAA12SL				21.0/1290	9,300 psi	
Fed. 209	WST	Fed. 12S0	19.5/1180	21.0/1235	21.8/1265	22.5/1290	9,300 psi	
Fed. 209	WST	WAA12SL	21.0/1235	21.4/1250	21.8/1265	22.5/1290	7,400 psi	

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type								
Fed. 209A	IMR 700-X	CB 1100-12	15.0/1100	16.0/1145	17.5/1205	18.5/1205	8,700 psi	
Fed. 209A	IMR 700-X	Fed. 12S3	14.5/1090	15.5/1140	17.0/1210	18.0/1250	10,700 psi	
Fed. 209A	IMR 700-X	BP HCDP				17.0/1210	9,800 psi	#12
Fed. 209A	IMR 700-X	Rem. TGT12	15.0/1110	16.0/1155	17.0/1195	18.5/1260	9,400 psi	
Fed. 209A	IMR 700-X	WAA12SL	15.0/1110	16.0/1155	17.0/1195	18.5/1255	9,700 psi	
Fed. 209A	IMR PB	CB 1100-12	18.5/1095	20.0/1145	21.5/1200	23.0/1260	7,200 psi	
Fed. 209A	IMR PB	Fed. 12S3	18.0/1095	19.5/1155	20.5/1195	22.0/1255	8,900 psi	
Fed. 209A	IMR PB	BP HCDP				20.5/1200	7,900 psi	#12
Fed. 209A	IMR PB	Rem. Fig.-8	18.5/1095	20.0/1150	21.0/1190	22.5/1250	7,400 psi	
Fed. 209A	IMR PB	WAA12	18.5/1110	19.5/1150	21.0/1210	22.5/1260	8,600 psi	
Fed. 209A	International	Pat.Ctrl.Prpl.	19.2/1180	20.0/1210	20.6/1235	21.7/1290	9,600 psi	
Fed. 209A	Nitro-100	WAA!@	16.0/1200	16.8/1230	17.7/1260	18.5/1290	10,300 psi	#11
Fed. 209A	Red Diamond	Claybuster	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,600 psi	#7
Fed. 209A	Red Diamond	H. Versalite	16.5/1180	17.1/1215	17.8/1250	18.5/1290	10,500 psi	#7
Fed. 209A	Red Diamond	Hawk II	16.5/1180	17.1/1215	17.8/1250	19.5/1290	10,300 psi	#7
Fed. 209A	Red Diamond	WAA12	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,600 psi	#7
Fed. 209A	Red Diamond	WAA12SL	16.5/1180	17.0/1215	17.5/1250	18.0/1290	9,800 psi	#7
Fed. 209A	Solo 1000	WAA12	17.5/1200	18.2/1230	18.8/1260	19.5/1290	10,600 psi	#11
Fed. 209A	IMR SR-7625	CB 1118-12	21.0/1100	22.0/1145	23.5/1210	24.5/1250	6,700 psi	
Fed. 209A	IMR SR-7625	Fed. 12S3	20.5/1110	21.5/1145	23.0/1200	24.5/1255	7,300 psi	
Fed. 209A	IMR SR-7625	BP HCDP				24.5/1255	7,400 psi	#12
Fed. 209A	IMR SR-7625	Rem. RXP12	21.5/1110	22.5/1150	23.5/1190	25.0/1250	6,700 psi	
Fed. 209A	IMR SR-7625	WAA12	20.0/1095	21.5/1145	23.5/1205	25.0/1260	7,400 psi	
Fed. 209A	WSL	WAA12L				21.0/1325	10,400 psi	
Fed. 209A	WST	WAA12L				21.5/1255	8,800 psi	
Fio. 615	IMR 700-X	BP DX12	18.9/1200	19.0/1235	19.2/1265	19.3/1300	10,000 LUP	#1
Fio. 615	IMR 700-X	BP HCDP	18.9/1200	19.1/1250	19.2/1275	19.3/1300	10,000 LUP	#1
Fio. 615	WSL	BP DX12				21.2/1290	10,000 LUP	#1
Fio. 615	WSL	BP HCDP				21.2/1290	10,000 LUP	#12
Fio. 616	Nitro-100	WAA12	16.0/1200	16.7/1230	17.3/1260	18.0/1290	10,600 psi	#11
Fio. 616	R. Scot D	WAA12	19.0/1200	19.5/1230	20.0/1260	20.5/1290	10,900 psi	
Fio. 616	Red Diamond	Claybuster	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,300 psi	#7
Fio. 616	Red Diamond	H. Versalite	16.5/1180	17.1/1215	17.8/1250	18.5/1290	10,100 psi	#7
Fio. 616	Red Diamond	Hawk II	16.5/1180	17.1/1215	17.8/1250	18.5/1290	10,500 psi	#7
Fio. 616	Red Diamond	WAA12	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,300 psi	#7
Fio. 616	Red Diamond	WAA12SL	16.5/1180	17.0/1215	17.5/1250	18.0/1290	8,800 psi	#7
Fio. 616	Solo 1000	WAA12	18.0/1200	18.5/1230	19.0/1260	19.5/1290	9,600 psi	#7
Rem. 209	Green Dot	Pat.Ctrl.Prpl.				19.0/1200	7,700 psi	
Rem. 209	Nitro-100	H. Versalite	17.0/1200	17.7/1225	18.3/1250	19.0/1275		
Rem. 209	Nitro-100	WAA12	17.5/1200	18.0/1225	18.5/1250	19.0/1275		
Rem. 209	Red Diamond	Claybuster	17.0/1180	18.0/1215	18.9/1250	20.0/1290	8,300 psi	#7
Rem. 209	Red Diamond	H. Versalite	17.0/1180	17.8/1215	18.6/1250	19.5/1290	8,600 psi	#7
Rem. 209	Red Diamond	Hawk II	17.5/1180	18.1/1215	18.8/1250	19.5/1290	9,800 psi	#7
Rem. 209	Red Diamond	WAA12	17.0/1180	18.0/1215	18.9/1250	20.0/1290	8,300 psi	#7
Rem. 209	Red Diamond	WAA12SL				19.5/1290	7,400 psi	#7
Rem. 209	Red Dot	Pat.Ctrl.Prpl.				17.5/1200	8,600 psi	
Rem. 209P	Clays	Pat.Ctrl.Prpl.	17.6/1125	18.6/1180	19.5/1235	20.5/1290	7,600 LUP	
Rem. 209P	IMR 700-X	CB 1100-12	16.0/1110	17.0/1150	18.0/1190	19.5/1250	7,000 psi	
Rem. 209P	IMR 700-X	Fed. 12S3	15.0/1105	16.5/1160	17.5/1200	18.5/1250	9,300 psi	
Rem. 209P	IMR 700-X	BPHCDP				17.0/1200	8,600 psi	#12
Rem. 209P	IMR 700-X	Rem. TGT12	15.5/1105	16.5/1140	18.0/1205	19.0/1250	7,700 psi	
Rem. 209P	IMR 700-X	WAA12SL	15.0/1095	16.5/1155	18.0/1210	19.0/1245	8,000 psi	
Rem. 209P	IMR PB	CB 1100-12	19.0/1100	20.5/1150	22.0/1200	23.5/1260	6,500 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type								
Rem. 209P	IMR PB	Fed. 12S3	19.0/1095	20.5/1150	22.0/1205	23.5/1260	7,600 psi	
Rem. 209P	IMR PB	BP HCDP				20.5/1165	6,700 psi	#12
Rem. 209P	IMR PB	Rem. Fig.-8	19.0/1085	21.0/1150	22.0/1190	23.5/2355	6,700 psi	
Rem. 209P	IMR PB	WAA12	19.0/1110	20.0/1145	21.5/1205	22.5/1250	7,700 psi	
Rem. 209P	International	Rem. TGT12	20.8/1180	21.2/1210	21.5/1235	22.3/1290	7,800 LUP	
Rem. 209P	Nitro-100	WAA12	16.5/1200	17.2/1230	17.8/1260	18.5/1290	10,200 psi	#11
Rem. 209P	R. Scot D	WAA12	19.5/1200	20.2/1230	20.8/1260	21.5/1290	9,700 psi	
Rem. 209P	Solo 1000	WAA12	18.5/1200	19.0/1230	19.5/1260	20.0/1290	9,600 psi	#11
Rem. 209P	IMR SR-7625	CB 1118-12	22.5/1110	23.5/1145	24.5/1190	26.0/1265	6,300 psi	
Rem. 209P	IMR SR-7625	Fed. 12S3	22.0/1095	23.5/1160	24.5/1210	25.5/1265	6,900 psi	
Rem. 209P	IMR SR-7625	BP HCDP				25.5/1255	7,400 psi	#12
Rem. 209P	IMR SR-7625	Rem. RXP12	22.5/1100	23.5/1145	24.5/1190	25.5/1245	6,000 psi	
Rem. 209P	IMR SR-7625	WAA12	21.5/1105	22.5/1150	23.5/1195	25.0/1255	7,100 psi	
Win. 209	Alliant e3	WAA12L (gray)				15.0/1150	8,635 psi	
Win. 209	Alliant e3	WAA12SL				15.5/1150	8,085 psi	
Win. 209	Alliant e3	Rem. TGT12				15.5/1150	8,530 psi	
Win. 209	Alliant e3	Claybuster 1100-12				16.0/1150	8,285 psi	
Win. 209	Alliant e3	Duster - Green				16.0/1150	8,730 psi	
Win. 209	Alliant e3	WAA12SL				16.5/1200	9,240 psi	
Win. 209	Alliant e3	Rem. TGT12				16.5/1200	9,305 psi	
Win. 209	Alliant e3	WAA12L (gray)				16.5/1200	9,410 psi	
Win. 209	Alliant e3	Claybuster 1100-12				17.0/1200	8,805 psi	
Win. 209	Alliant e3	Duster - Green				17.0/1200	9,525 psi	
Win. 209	Alliant e3	WAA12L (gray)				17.5/1255	9,740 psi	
Win. 209	Alliant e3	Rem. TGT12				17.5/1255	10,070 psi	
Win. 209	Alliant e3	Claybuster 1100-12				18.0/1255	9,245 psi	
Win. 209	Alliant e3	WAA12SL				18.0/1255	10,045 psi	
Win. 209	Alliant e3	Duster - Green				18.0/1255	10,580 psi	
Win. 209	Alliant e3	WAA12SL				18.5/1290	10,080 psi	
Win. 209	Alliant e3	WAA12SL9gray)				18.5/1290	10,870 psi	
Win. 209	Alliant e3	Rem. TGT12				18.5/1290	11,015 psi	
Win. 209	Alliant e3	Claybuster 1100-12				19.0/1290	10,135 psi	
Win. 209	#2 Improved	WAA12SL	18.5/1200	19.2/1230	19.8/1260	20.5/1290	10,900 psi	#11
Win. 209	American Select	Claybuster	19.0/1200	19.8/1230	20.7/1260	21.5/1290	9,200 psi	
Win. 209	American Select	CS12S		18.3/1210	18.4/1220	18.5/1225	10,600 psi	
Win. 209	American Select	Fed. 12S0	19.0/1200	19.5/1230	20.0/1260	20.5/1290	10,200 psi	
Win. 209	American Select	Rem. TGT12	19.0/1200	19.7/1230	20.3/1260	21.0/1290	9,500 psi	
Win. 209	American Select	WAA12SL	19.0/1200	19.8/1230	20.7/1260	21.5/1290	10,300 psi	
Win. 209	American Select	BP Zero	18.3/1200	18.8/1225	19.3/1250	19.8/1300	9,400 psi	
Win. 209	Bullseye	Fed. 12S0				18.0/1200	9,600 psi	
Win. 209	Bullseye	Fed. 12S3				17.5/1200	8,700 psi	#9
Win. 209	Bullseye	Lage Uniwad				17.5/1200	8,900 psi	#9
Win. 209	Bullseye	Pat.Ctrl.Prpl.				17.5/1200	7,300 psi	
Win. 209	Bullseye	Rem. R12L				18.0/1200	8,800 psi	#9
Win. 209	Bullseye	Rem. RXP12				17.5/1200	8,800 psi	
Win. 209	Bullseye	WAA12				17.5/1200	9,900 psi	#9
Win. 209	Bullseye	WAA12F1				18.0/1200	9,500 psi	#9
Win. 209	Bullseye	Windjammer				18.0/1200	9,500 psi	#10
Win. 209	Clays	BP DX12	16.5/1160	17.5/1200	18.5/1240	19.5/1280	9,700 LUP	#1

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type								
Win. 209	Clays	BP HCDP	16.5/1160	17.5/1180	18.0/1200	19.0/1255	9,500 LUP	#12
Win. 209	Clays	Trapper	15.0/1125	15.6/1155	16.0/1180	18.0/1235	9,800 LUP	
Win. 209	Clays	WAA12SL	16.0/1125	17.2/1180	18.5/1235	19.8/1290	10,200 LUP	
Win. 209	Clays	Windjammer II	15.3/1125	16.0/1180	17.8/1235	19.0/1290	11,200 psi	
Win. 209	Clays	Windjammer	15.3/1125	16.5/1180	18.0/1235	19.6/1290	10,700 psi	
Win. 209	Green Dot	BP DX12	19.5/1200	20.0/1220	20.6/1240	21.0/1255	8,800 psi	#12
Win. 209	Green Dot	Fed. 12C1				21.0/1290	8,800 psi	
Win. 209	Green Dot	Fed. 12S0				19.5/1200	8,400 psi	
Win. 209	Green Dot	Fed. 12S0				19.5/1200	8,400 psi	
Win. 209	Green Dot	Fed. 12S3				22.5/1290	9,700 psi	
Win. 209	Green Dot	BP HCDP	19.5/1200	20.0/1220	21.0/1255	21.5/1290	9,700 psi	#12
Win. 209	Green Dot	Lage Uniwad				20.5/1200	7,400 psi	
Win. 209	Green Dot	Pat.Ctrl.Prpl.	19.5/1200	20.3/1230	21.2/1260	22.0/1290	9,000 psi	
Win. 209	Green Dot	Pat.Ctrl.Prpl.				19.5/1200	6,900 psi	
Win. 209	Green Dot	Rem. R12L				20.0/1200	7,100 psi	
Win. 209	Green Dot	Rem. RXP12				21.0/1290	8,800 psi	
Win. 209	Green Dot	Rem. RXP12				20.0/1200	7,100 psi	
Win. 209	Green Dot	Rem. TGT12	19.5/1200	20.3/1230	21.2/1260	22.0/1290	9,700 psi	
Win. 209	Green Dot	WAA12				20.0/1290	8,700 psi	
Win. 209	Green Dot	WAA12				19.5/1200	7,500 psi	
Win. 209	Green Dot	WAA12F1				20.0/1200	7,600 psi	
Win. 209	Green Dot	WAA12SL	19.5/1200	20.2/1230	20.8/1260	21.5/1290	9,500 psi	
Win. 209	Green Dot	Windjammer				20.0/1200	7,600 psi	
Win. 209	IMR 700-X	BP DX12	18.5/1245	18.7/1255	18.8/1265	19.0/1275	9,700 LUP	#1
Win. 209	IMR 700-X	CB 1100-12	14.5/1090	15.5/1140	17.0/1205	18.0/1245	9,300 psi	
Win. 209	IMR 700-X	Fed. 12S3	14.5/1100	15.5/1140	17.0/1205	18.0/1250	10,500 psi	
Win. 209	IMR 700-X	BP HCDP				17.0/1200	9,600 psi	#12
Win. 209	IMR 700-X	BP HCDP	18.5/1245	18.7/1260	18.8/1265	19.0/1275	9,700 LUP	#12
Win. 209	IMR 700-X	Rem. TGT12	14.5/1095	15.5/1140	16.5/1190	18.0/1250	9,400 psi	
Win. 209	IMR 700-X	WAA12SL	14.5/1105	15.5/1145	16.5/1195	18.0/1250	10,100 psi	
Win. 209	IMR PB	CB 1100-12	19.0/1110	20.5/1140	22.0/1190	23.5/1255	6,600 psi	
Win. 209	IMR PB	Fed. 12S3	19.0/1105	20.5/1160	21.5/1200	23.0/1250	8,100 psi	
Win. 209	IMR PB	BP HCDP	20.5/1165	20.9/1180	21.2/1190	21.5/1200	7,000 psi	#12
Win. 209	IMR PB	Rem. Fig.-8	19.0/1100	20.0/1140	21.5/1195	23.0/1255	7,200 psi	
Win. 209	IMR PB	Rem. TGT12	18.0/1095	19.5/1140	21.5/1200	23.0/1260	7,500 psi	
Win. 209	IMR PB	WAA12	18.5/1105	20.0/1150	21.5/1200	23.0/1260	7,900 psi	
Win. 209	International	WAA12SL	18.9/1180	19.7/1210	20.4/1235	21.3/1290	8,900 LUP	
Win. 209	Nitro-100	BP 21				18.5/1290	8,500 psi	#11
Win. 209	Nitro-100	BP DX12	17.0/1200	17.5/1220	18.0/1240	18.5/1275	9,300 psi	#1
Win. 209	Nitro-100	BP TC				17.0/1200	6,800 psi	#11
Win. 209	Nitro-100	CB 1118-12	18.5/1200	18.5/1230	18.5/1260	18.5/1290	9,800 psi	#11
Win. 209	Nitro-100	Fed. 12S0	16.5/1200	17.0/1230	17.5/1260	18.0/1290	9,700 psi	#11
Win. 209	Nitro-100	H. Versalite	17.0/1200	17.7/1225	18.3/1250	19.0/1275		
Win. 209	Nitro-100	BP HCDP	17.0/1200	17.5/1220	18.5/1275	19.0/1320	10,000 psi	#12
Win. 209	Nitro-100	Rem. Fig.-8	16.5/1200	17.0/1230	17.5/1260	18.0/1290	8,400 psi	#11
Win. 209	Nitro-100	Rem. TGT12	16.5/1200	17.0/1230	17.5/1260	18.0/1290	8,700 psi	#11
Win. 209	Nitro-100	WAA12	17.0/1200	17.5/1225	18.0/1250	18.5/1275		
Win. 209	Nitro-100	WAA12SL	17.0/1200	17.3/1230	17.7/1260	18.0/1290	9,000 psi	#11
Win. 209	Promo	WAA12SL				18.0/1200		
Win. 209	Promo	Claybuster 1100-12				18.0/1200		
Win. 209	Promo	Purple PC				18.0/1200		
Win. 209	Promo	WAA12SL				19.0/1255		

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type								
Win. 209	Promo	WAA12SL				19.0/1255		
Win. 209	Promo	Claybuster 1100-12				19.0/1255		
Win. 209	Promo	Purple PC				19.0/1255		
Win. 209	R. Scot D	Claybuster	19.5/1200	20.2/1230	20.8/1260	21.5/1290	8,600 psi	
Win. 209	R. Scot D	Fed. 12SO	19.0/1200	19.8/1230	20.7/1260	21.5/1290	10,400 psi	
Win. 209	R. Scot D	Rem. Fig.-8	19.5/1200	20.2/1230	20.8/1260	21.5/1290	10,100 psi	
Win. 209	R. Scot D	Rem. TGT12	19.0/1200	19.8/1230	20.7/1260	21.5/1290	9,800 psi	
Win. 209	R. Scot D	WAA12	19.0/1200	19.7/1230	20.3/1260	21.0/1290	10,300 psi	
Win. 209	R. Scot D	WAA12F1	19.5/1200	20.2/1230	20.8/1260	21.5/1290	9,300 psi	
Win. 209	Red Diamond	Claybuster	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,800 psi	#7
Win. 209	Red Diamond	H. Versalite	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,900 psi	#7
Win. 209	Red Diamond	Hawk II	16.5/1180	17.1/1215	17.8/1250	18.5/1290	10,00 psi	#7
Win. 209	Red Diamond	WAA12	16.5/1180	17.1/1215	17.8/1250	18.5/1290	9,800 psi	#7
Win. 209	Red Diamond	WAA12SL	16.5/1180	17.0/1215	17.5/1250	18.0/1290	9,900 psi	#7
Win. 209	Red Dot	BP DX12				17.5/1250	10,000 psi	#1
Win. 209	Red Dot	Fed. 12C1				20.0/1290	10,200 psi	
Win. 209	Red Dot	Fed. 12SO				18.0/1200	9,600 psi	
Win. 209	Red Dot	Fed. 12SO				18.0/1200	9,600 psi	
Win. 209	Red Dot	Fed. 12S3				20.0/1290	9,900 psi	
Win. 209	Red Dot	Fed. 12S3				18.0/1200	8,400 psi	
Win. 209	Red Dot	Lage Uniwad				18.0/1200	8,000 psi	
Win. 209	Red Dot	Pat.Ctrl.Prpl.	18.0/1200	18.4/1230	19.3/1260	20.0/1290	10,400 psi	
Win. 209	Red Dot	Pat.Ctrl.Prpl.				17.5/1200	8,800 psi	
Win. 209	Red Dot	Rem. R12L				18.0/1200	7,600 psi	
Win. 209	Red Dot	Rem. RXP12				20.0/1290	10,100 psi	
Win. 209	Red Dot	Rem. RXP12				18.0/1200	8,300 psi	
Win. 209	Red Dot	Rem. TGT12	18.0/1200	18.4/1215	18.8/1230	19.5/1255	9,800 psi	
Win. 209	Red Dot	WAA12				19.0/1290	10,500 psi	
Win. 209	Red Dot	WAA12				18.0/1200	8,800 psi	
Win. 209	Red Dot	WAA12F1				18.0/1200	9,000 psi	
Win. 209	Red Dot	WAA12SL	18.0/1200	18.3/1215	18.5/1230	19.0/1255	10,500 psi	
Win. 209	Red Dot	Windjammer				18.0/1200	9,100 psi	#9
Win. 209	Red Dot	WT12 Orange				17.5/1200	10,600 psi	
Win. 209	Scot 453	WAA12SL	17.5/1200	18.2/1230	18.8/1260	19.5/1290		
Win. 209	Solo 1000	BP DX12	18.5/1200	19.5/1240	20.0/1260	20.5/1290	8,900 psi	#1
Win. 209	Solo 1000	BP TC	18.0/1200	18.5/1230	19.0/1260	19.5/1290	9,000 psi	#11
Win. 209	Solo 1000	CB 1118-12	18.0/1200	18.5/1230	19.0/1260	19.5/1290	9,500 psi	#11
Win. 209	Solo 1000	Claybuster	19.0/1200	19.7/1230	20.3/1260	21.0/1290		
Win. 209	Solo 1000	Fed. 12SO	18.0/1200	18.5/1230	19.0/1260	19.5/1290	9,900 psi	#11
Win. 209	Solo 1000	BP HCDP	18.5/1200	19.0/1220	20.0/1260	21.0/1290	9,500 psi	#12
Win. 209	Solo 1000	Rem. Fig.-8	18.0/1200	18.5/1230	19.0/1260	19.5/1290	9,300 psi	#11
Win. 209	Solo 1000	Rem. TGT12	18.0/1200	18.5/1230	19.0/1260	19.5/1290	9,000 psi	#11
Win. 209	Solo 1000	WAA12	18.5/1200	19.2/1230	19.8/1260	20.5/1290		
Win. 209	Solo 1000	WAA12F1	19.0/1200	19.7/1230	20.3/1260	21.0/1290		
Win. 209	Solo 1000	WAA12SL	18.0/1200	18.5/1230	19.0/1260	19.5/1290	10,300 psi	#11
Win. 209	IMR SR-7625	CB 1118-12	22.0/1095	23.5/1150	25.0/1210	26.0/1250	6,200 psi	
Win. 209	IMR SR-7625	Fed. 12S3	22.0/1105	23.0/1155	24.0/1205	25.0/1250	7,100 psi	
Win. 209	IMR SR-7625	BP HCDP				24.5/1200	6,000 psi	#12
Win. 209	IMR SR-7625	Rem. RXP12	22.0/1095	23.5/1140	25.0/1200	26.0/1245	6,200 psi	
Win. 209	IMR SR-7625	WAA12	21.5/1095	23.0/1150	24.0/1190	25.5/1255	6,600 psi	
Win. 209	W 452AA	BP HCDP				23.0/1290	9,000 LUP	#12
Win. 209	W 452AA	WAA12SL	20.0/1180	21.5/1235	22.3/1265	23.0/1290	7.900 LUP	

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type								
Win. 209	WAAP	WAA12SL	18.0*/1180	19.0/1235	19.7/1265	20.5/1290	9,700 psi	*#13
Win. 209	WSL	BP DX12				21.0/1290	9,600 psi	#1
Win. 209	WSL	Fed. 12SO				21.5/1290	10,100 psi	
Win. 209	WSL	WAA12SL				21.0/1290	9,500 psi	
Win. 209	WST	BP DX12	19.5/1180	20.3/1215	20.6/1230	21.0/1250	9,700 psi	#1
Win. 209	WST	Fed. 12SO	19.0/1180	20.5/1235	21.3/1265	22.0/1290	9,500 psi	
Win. 209	WST	BP HCDP	19.5/1180	20.0/1215	20.5/1255	21.0/1290	9,600 psi	#12
Win. 209	WST	WAA12L	19.5/1200	21.0/1255	21.7/1285	22.5/1325	11,100 psi	
Win. 209	WST	WAA12SL	19.5*/1180	21.0/1235	21.6/1265	22.0/1290	8,100 psi	*#13
Win. AATP	Clays	WAA12SL	15.6/1125	16.3/1155	16.9/1180	18.2/1235	10,900 psi	
Win. AATP	International	WAA12SL	18.2/1180	18.8/1200	19.4/1220	20.0/1235	9,000 psi	
Win. AATP	WST	WAA12SL	19.5/1180	20.5/1235	21.3/1265	22.0/1290	9,600 psi	
Winchester: Polyformed (Separate Plastic Base Wad)								
CCI 209M	Green Dot	WAA12F1				23.0/1290	7,500 psi	
CCI 209M	Red Dot	WAA12F1				21.0/1290	8,400 psi	
Fed. 209	Red Dot	WAA12F1				21.0/1290	8,200 psi	
Fio. 616	Green Dot	WAA12F1				23.0/1290	7,400 psi	
Fio. 616	Red Dot	WAA12F1				21.5/1290	7,900 psi	
Rem. 209P	Red Dot	WAA12F1				21.5/1290	7,800 psi	
Win. 209	Green Dot	Pat.Ctrl.Prpl.				24.0/1290	6,800 psi	
Win. 209	Green Dot	Rem. Fig.-8				23.0/1290	7,800 psi	
Win. 209	Green Dot	WAA12F1				23.5/1290	7,000 psi	
98145.4	Red Dot	Pat.Ctrl.Prpl.				21.5/1290	7,900 psi	
Win. 209	Red Dot	Rem. Fig.-8				21.5/1290	8,500 psi	
Win. 209	Red Dot	WAA12F1				22.0/1290	7,600 psi	
Win. 209	W 452AA	Fed. 12S3				23.0/1290	8,400 LUP	

Load Notes: #1 = Disperser-X. #2 = Piston Skeet. #3 = Hex Cushion DR-24. #4 = Short Range Crusher. #5 = Trap Commander. #6 = Minimum overall length is 2 10/32", maximum crimp depth = 2/32". #7 = Use 50-60 pounds wad pressure to ensure wad is firmly seated against powder. #8 = Scatter Master. #9 = Add one 20-gauge, 0.135" card inside bottom of shotcup. #10 = Add two 20-gauge, 0.135" cards inside bottom of shotcup. #11 = Minimum overall length = 2 9/32", maximum crimp depth 2/32". #12 = Helix Cushion Platform.

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
3/4 Ounce Lead Shot								
Fiocchi								
Fio. 616	Bullseye	REX				21.5/1400	8,200 psi	COS12 overshot
Fio. 616	Bullseye	REX				23.0/1485	9,100 psi	COS12 overshot
Fio. 616	Titewad	REX				19.5/1345	7,570 psi	COS12 overshot
Winchester: Compression-Formed AA Type								
Fio. 615	IMR 700-X	BP DX12		18.9/1170	19.4/1225	19.8/1275	9,600 LUP	#1
Fio. 616	Titewad	REX				17.5/1335	8,800 psi	COS12 overshot
Fio. 616	WSL	BP DX12				18.8/1290	7,900 LUP	#1
Win. 209	IMR 700-X	BP DX12				19.0/1255	9,500 LUP	#1
	Load Notes: #1 = Disperser-X.							
7/8 Ounce Lead Shot								
Ballistic Products: Multi-Hull 12 2A								
Win. 209	Red Dot	L078				22.0/1380	9,100 psi	COS12 overshot
Win. 209	Red Dot	Pisk-Piston Skeet				22.0/1400	9,300 psi	COS12 overshot
Win. 209	Red Dot	SRC (Short Range Crusher)				22.0/1375	9,000 psi	COS12 overshot
W209	Titewad	BPGS + LB12-2				19.0/1300	9,000 psi	COS12 overshot
Federal: Gold Medal Plastic Shells								
CCI 209	Nitro-100	Fed. 12S0				19.5/1325	6,000 psi	#6, #7
CCI 209	R. Scot D	Fed. 12S0				22.5/1325	8,700 LUP	#7
CCI 209	Solo 1000	Fed. 12S0				22.0/1325	8,600 LUP	#6, #7
CCI 209M	Nitro-100	Fed. 12S0				19.0/1325	7,100 psi	#6, #7
CCI 209M	R. Scot D	Fed. 12S0				21.0/1325	8,500 LUP	#7
CCI 209M	Solo 1000	Fed. 12S0				20.5/1325	8,300 LUP	#6, #7
CCI 209SC	Clays	WAA12L		21.7/1350	22.1/1375	22.5/1400	11,300 psi	
CCI 209SC	Clays	WAA12SL		18.5/1200	19.0/1250	20.5/1300	8,000 psi	
CCI 209SC	International	WAA12L	22.7/1300	24.0/1350	25.0/1400	27.0/1500	10,300 psi	
Fed. 209	Bullseye	Fed. 12S0				17.0/1200	6,300 psi	#3
Fed. 209	Bullseye	Rem. PT12				17.5/1200	5,500 psi	#4
Fed. 209	Bullseye	WAA12F1				17.0/1200	5,800 psi	#4
Fed. 209	R. Scot D	Fed. 12S0				22.5/1325	7,000 LUP	#7
Fed. 209	Red Dot	Fed. 12S0				18.0/1200	6,200 psi	
Fed. 209	Red Dot	Rem. PT12				18.0/1200	6,400 psi	#4
Fed. 209	Red Dot	WAA12F1				18.0/1200	5,700 psi	
Fed. 209	Solo 1000	Fed. 12S0				22.0/1325	7,600 LUP	#7
Fed. 209A	American Select	Claybuster				21.5/1300	6,900 psi	
Fed. 209A	American Select	Fed. 12S0				21.0/1300	7,300 psi	

"Caution: *Follow* load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Gold Medal Plastic Shells								
Fed. 209A	Clays	Fed. 12S0		17.0/1200	18.3/1250	19.5/1300	8,100 psi	
Fed. 209A	Clays	WAA12L	18.5/1200	20.0/1300	21.5/1350	22.5/1400	11,500 psi	
Fed. 209A	Green Dot	Fed. 12S0				22.0/1300	7,500 psi	
Fed. 209A	Green Dot	Pat.Ctrl.Prpl.				22.5/1300	7,000 psi	#3
Fed. 209A	Green Dot	Rem. TGT12				22.0/1300	7,200 psi	#3
Fed. 209A	Green Dot	WAA12SL				21.0/1300	7,600 psi	#3
Fed. 209A	International	WAA12L	22.3/1300	23.2/1350	24.5/1400	25.7/1350	10,000 psi	
Fed. 209A	Nitro-100	Fed. 12S0				18.5/1325	7,600 psi	#6, #7
Fed. 209A	Red Dot	Fed. 12S0		17.5/1200	19.0/1250	19.5/1300	8,400 psi	
Fed. 209A	Red Dot	Pat.Ctrl.Prpl.		17.0/1200	18.5/1250	19.5/1300	7,900 psi	#3
Fed. 209A	Red Dot	Rem. TGT12		17.5/1200	18.5/1250	19.5/1300	8,500 psi	#3
Fed. 209A	Red Dot	WAA12SL		17.5/1200	18.0/1250	19.0/1300	8,400 psi	#3
Fed. 209A	Solo 1000	Fed. 12S0				21.5/1325	7,600 LUP	#6, #7
Fed. 209A	Alliant e3	Fed. 12S0				16.5/1200	6,905 psi	
Fed. 209A	Alliant e3	Rem. TGT12				17.0/1250	7,095 psi	
Fed. 209A	Alliant e3	Fed. 12S0				17.5/1250	8,095 psi	
Fed. 209A	Alliant e3	Rem. TGT12				18.0/1300	7,925 psi	
Fed. 209A	Alliant e3	Fed. 12S0				18.5/1300	8,855 psi	
Fio. 616	Nitro-100	Fed. 12S0				19.0/1325	7,300 psi	#6, #7
Fio. 616	R. ScotD	Fed. 12S0				22.0/1325	8,500 LUP	#7
Fio. 616	Solo 1000	Fed. 12S0				21.0/1325	8,700 LUP	#6, #7
Rem. 209P	Nitro-100	Fed. 12S0				19.5/1325	7,000 psi	#6, #7
Rem. 209P	R. Scot D	Fed. 12S0				22.0/1325	8,400 LUP	#7
Rem. 209P	Solo 1000	Fed. 12S0				21.5/1325	7,500 LUP	#6, #7
Win.209	Clays	Rem. TGT12		17.6/1200	18.4/1250	19.2/1300	6,900 psi	
Win.209	Clays	WAA12L	18.2/1200	20.3/1300	22.0/1350	23.0/1400	10,500 psi	
Win.209	International	WAA12L	23.5/1300	24.3/1350	25.5/1400	27.0/1450	9,600 psi	
Win.209	R. Scot D	Fed. 12S0				22.0/1325	8,400 LUP	#7
Win.209	Solo 1000	Fed. 12S0				21.0/1325	8,400 LUP	#6, #7
Federal: Paper Shells								
CCI 209	Nitro-100	Fed. 12S0				20.5/1325	6,300 psi	#6, #7
CCI 209	R. Scot D	Fed. 12S0				24.0/1325	8,000 LUP	#7
CCI 209	Solo 1000	Fed. 12S0				22.5/1325	5,800 psi	#6, #7
CCI 209M	Nitro-100	Fed. 12S0				20.0/1325	6,400 psi	#6, #7
CCI 209M	R. Scot D	Fed. 12S0				23.0/1325	8,200 LUP	#7
CCI 209M	Solo 1000	Fed. 12S0				21.0/1325	7,200 psi	#6, #7
Fed. 209	Bullseye	Fed. 12S0				17.5/1200	4,500 psi	
Fed. 209	Bullseye	Rem. PT12				17.5/1200	5,100 psi	#3
Fed. 209	Bullseye	WAA12F1				17.5/1200	4,600 psi	#3
Fed. 209	R. Scot D	Fed. 12S0				24.0/1325	7,500 LUP	#7
Fed. 209	Red Dot	Fed. 12S0				17.5/1200	5,700 psi	
Fed. 209	Red Dot	Rem. PT12				17.5/1200	5,000 psi	
Fed. 209	Red Dot	WAA12F1				17.5/1200	4,800 psi	
Fed. 209	Solo 1000	Fed. 12S0				22.5/1325	8,600 psi	#7
Fed. 209A	Nitro-100	Fed. 12S0				19.5/1325	6,800 psi	#6, #7
Fed. 209A	Solo 1000	Fed. 12S0				22.0/1325	6,700 psi	#6, #7
Fed. 209A	Alliant e3	Claybuster 4100-12B				16.5/1200	6,280 psi	
Fed. 209A	Alliant e3	WAA12L (gray)				16.5/1200	6,960 psi	
Fed. 209A	Alliant e3	Claybuster 4100-12B				17.5/1250	7,075 psi	
Fed. 209A	Alliant e3	WAA12L (gray)				17.5/1250	7,345 psi	

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Paper Shells								
Fed. 209A	Alliant e3	WAA12L (gray)				18.5/1300	8,230 psi	
Fio. 616	Nitro-100	Fed. 12SO				20.0/1325	6,400 psi	#6, #7
Fio. 616	R. Scot D	Fed. 12SO				23.0/1325	8,500 LUP	#7
Fio. 616	Solo 1000	Fed. 12SO				21.0/1325	7,400 psi	#6, #7
Rem. 209P	Nitro-100	Fed. 12SO				20.5/1325	6,600 psi	#6, #7
Rem. 209P	R. Scot D	Fed. 12SO				23.5/1325	8,500 LUP	#7
Rem. 209P	Solo 1000	Fed. 12SO				22.5/1325	6,900 psi	#6, #7
Win. 209	Nitro-100	Fed. 12SO				19.5/1325	6,400 psi	#6, #7
Win. 209	R. Scot D	Fed. 12SO				23.0/1325	8,600 LUP	#7
Win. 209	Solo 1000	Fed. 12SO				21.0/1325	7,200 psi	#6, #7
Fiocchi: Purple Target (High Base Wad)								
CCI 209	R. Scot D	Fiocchi TL1				22.5/1325	8,200 LUP	#7
CCI 209	Solo 1000	Fiocchi TL1				22.0/1325	8,600 LUP	#5, #7
CCI 209M	Clays	Pat.Ctrl.Prpl.		17.3/1200	18.1/1250	19.2/1300	7,700 psi	
CCI 209M	R. Scot D	Fiocchi TL1				21.5/1325	9,500 LUP	#7
CCI 209M	Solo 1000	Fiocchi TL1				21.0/1325	9,600 LUP	#5, #7
CCI 209SC	Clays	WAA12SL	17.7/1200	18.5/1250	19.5/1300	21.0/1350	9,900 psi	
CCI 209SC	International	WAA12SL		21.0/1250	22.0/1300	22.5/1350	8,500 psi	
Fed. 209	R. Scot D	Fiocchi TL1				22.5/1325	9,600 LUP	#7
Fed. 209	Solo 1000	Fiocchi TL1				22.0/1325	8,800 LUP	#7
Fed. 209A	Clays	Rem. TGT12		16.5/1200	17.7/1250	18.7/1300	7,400 psi	
Fed. 209A	Solo 1000	Fiocchi TL1				21.5/1325	8,800 LUP	#5, #7
Fio. 616	American Select	BP DX12		20.0/1150	20.2/1170	20.5/1200	9,300 psi	#1
Fio. 616	American Select	Fisk		19.8/1150	20.0/1175	20.2/1200	9,400 psi	#2
Fio. 616	Clays	Fed. 12SO		16.6/1200	17.8/1250	19.2/1300	8,500 psi	
Fio. 616	Green Dot	Pat.Ctrl.Prpl.				22.5/1300	7,700 psi	
Fio. 616	Green Dot	Rem. TGT12				22.0/1300	7,600 psi	
Fio. 616	Green Dot	WAA12SL				22.0/1300	7,900 psi	
Fio. 616	IMR 700-X	BP DX12		15.2/1200	16.2/1225	17.2/1250	7,700 psi	#1
Fio. 616	R. Scot D	Fiocchi TL1				21.5/1325	10,300 LUP	#7
Fio. 616	Red Dot	BP DX12		17.5/1200	17.7/1245	18.2/1290	8,300 psi	#1
Fio. 616	Red Dot	Fed. 12SO		17.5/1200	19.0/1250	19.5/1300	8,800 psi	
Fio. 616	Red Dot	Pat.Ctrl.Prpl.		17.5/1200	19.0/1250	20.0/1300	8,600 psi	#3
Fio. 616	Red Dot	Rem. TGT12		17.5/1200	18.5/1250	20.0/1300	7,900 psi	#3
Fio. 616	Red Dot	WAA12SL		17.5/1200	18.5/1250	20.0/1300	8,100 psi	#3
Fio. 616	Solo 1000	BP DX12		18.8/1200	19.2/1230	19.7/1260	8,600 psi	#1
Fio. 616	Solo 1000	Fiocchi TL1				21.0/1325	9,200 LUP	#5, #7
Rem. 209P	R. Scot D	Fiocchi TL1				22.0/1325	8,800 LUP	#7
Rem. 209P	Solo 1000	Fiocchi TL1				22.0/1325	8,000 LUP	#5, #7
Win. 209	Clays	WAA12SL		16.8/1200	18.0/1250	19.0/1300	8,000 psi	
Win. 209	R. Scot D	Fiocchi TL1				21.5/1325	10,000 LUP	#7
Win. 209	Solo 1000	Fiocchi TL1				21.0/1325	9,500 LUP	#5, #7
Remington: Premier & Nitro 27 & STS								
CCI 209	Nitro-100	Rem. TGT12				18.5/1325	8,000 psi	#5, #7
CCI 209	R. Scot D	Rem. TGT12				21.5/1325	8,600 LUP	#7
CCI 209	Solo 1000	Rem. TGT12				21.0/1325	8,600 LUP	#5, #7
CCI 209	WSL	WAA12SL		20.0/1325	20.7/1360	21.5/1400	9,700 psi	
CCI 209	WST	WAA12SL		21.5/1325	22.2/1360	23.0/1400	9,000 psi	
CCI 209M	Nitro-100	Rem. TGT12				18.0/1325	8,000 psi	#5, #7

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Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: Premier & Nitro 27 & STS								
CCI 209M	R. Scot D	Rem. TGT12				20.5/1325	9,000 LUP	#7
CCI 209M	Solo 1000	Rem. TGT12				20.0/1325	9,400 LUP	#5, #7
CCI 209SC	Clays	Rem. TGT12	18.0/1200	18.8/1250	19.5/1300	20.5/1350	9,900 psi	
CCI 209SC	International	Rem. TGT12	20.0/1200	21.0/1300	22.2/1350	23.2/1400	9,200 psi	
Fed. 209	R. Scot D	Rem. TGT12				21.5/1325	8,900 LUP	#7
Fed. 209	Solo 1000	Rem. TGT12				21.0/1325	8,500 LUP	#7
Fed. 209A	Nitro-100	Rem. TGT12				21.5/1325	9,000 psi	#5, #7
Fed. 209A	Solo 1000	Rem. TGT12				21.0/1325	8,500 LUP	#5, #7
Fed. 209A	WSL	WAA12SL		20.0/1325	20.7/1360	21.5/1400	9,400 psi	
Fed. 209A	WST	WAA12SL		21.0/1325	21.9/1360	23.0/1400	9,700 psi	
Fio. 616	Nitro-100	Rem. TGT12				18.0/1325	8,100 psi	#5, #7
Fio. 616	R. Scot D	Rem. TGT12				21.0/1325	9,200 LUP	#7
Fio. 616	Solo 1000	Rem. TGT12				20.5/1325	9,700 LUP	#5, #7
Rem. 209P	Alliant e3	Fed. 12S0				15.5/1200	8,015 psi	
Rem. 209P	Alliant e3	WAA12L (gray)				16.0/1200	7,265 psi	
Rem. 209P	Alliant e3	Claybuster 4100-12B				16.2/1200	6,195 psi	
Rem. 209P	Alliant e3	Fed. 12S0				17.0/1250	7,575 psi	
Rem. 209P	Alliant e3	WAA12L (gray)				17.0/1250	7,655 psi	
Rem. 209P	Alliant e3	Rem. TGT12				17.0/1250	7,820 psi	
Rem. 209P	Alliant e3	Claybuster 4100-12B				17.2/1250	7,045 psi	
Rem. 209P	Alliant e3	Rem. TGT12				17.8/1300	8,585 psi	
Rem. 209P	Alliant e3	Fed. 12S0				17.8/1300	10,245 psi	
Rem. 209P	Alliant e3	WAA12L (gray)				18.0/1300	8,525 psi	
Rem. 209P	Alliant e3	Claybuster 4100-12B				18.2/1300	7,580 psi	
Rem. 209P	American Select	Claybuster				20.5/1300	6,900 psi	
Rem. 209P	American Select	BP DX12		20.0/1200	20.2/1210	20.5/1220	10,500 psi	#1
Rem. 209P	American Select	Fed. 12S0				20.5/1300	7,700 psi	
Rem. 209P	American Select	Fisk		19.6/1200	20.2/1220	20.7/1250	11,000 psi	#2
Rem. 209P	American Select	Rem. TGT12				20.5/1300	7,000 psi	
Rem. 209P	American Select	WAA12SL				20.5/1300	7,900 psi	
Rem. 209P	Clays	Fed. 12S0		16.0/1200	17.2/1250	18.8/1300	9,100 psi	
Rem. 209P	Clays	Rem. TGT12		16.4/1200	17.5/1250	18.9/1300	7,400 psi	
Rem. 209P	Clays	WAA12SL		18.0/1250	18.7/1270	19.5/1300	10,200 psi	
Rem. 209P	Green Dot	Fed. 12S0				22.0/1300	8,000 psi	
Rem. 209P	Green Dot	Rem. TGT12				22.0/1300	7,100 psi	
Rem. 209P	Green Dot	WAA12SL				21.5/1300	7,900 psi	
Rem. 209P	International	WAA12SL	20.0/1250	21.5/1300	23.5/1350	24.5/1400	10,200 psi	
Rem. 209P	Nitro-100	Rem. TGT12				18.0/1325	8,100 psi	#5, #7
Rem. 209P	R. Scot D	Rem. TGT12				21.5/1325	9,100 LUP	#7
Rem. 209P	Red Dot	Fed. 12S0		17.0/1200	18.0/1250	20.0/1300	8,100 psi	
Rem. 209P	Red Dot	Pat.Ctrl.Prpl.		17.5*/1200	18.5/1250	20.0/1300	7,500 psi	*#3
Rem. 209P	Red Dot	Rem. TGT12		17.0*/1200	18.5*/1250	20.5/1300	8,200 psi	*#3
Rem. 209P	Red Dot	WAA12SL		17.0*/1200	18.5*/1250	20.5/1300	8,000 psi	*#3
Rem. 209P	Solo 1000	Rem. TGT12				25.5/1325	9,200 LUP	#5, #7
Win. 209	Clays	WAA12SL		15.9/1200	17.1/1250	18.2/1300	10,000 psi	

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: Premier & Nitro 27 & STS								
Win. 209	Nitro-100	Rem. TGT12				18.0/1325	7,600 psi	#5, #7
Win. 209	R. Scot D	Rem. TGT12				21.0/1325	9,700 LUP	#7
Win. 209	Solo 1000	Rem. TGT12				20.5/1325	10,000 LUP	#5, #7
Win. 209	WSL	WAA12SL		20.0/1325	20.7/1360	21.5/1400	9,300 psi	
Win. 209	WST	WAA12SL		21.0/1325	21.9/1360	23.0/1400	10,300 psi	
Win. AATP	Clays	WAA12SL		16.5/1200	17.8/1250	18.8/1300	9,500 psi	
Victory: Plastic								
CCI 209M	Clays	Pat.Ctrl.Prpl.		17.3/1200	18.1/1250	19.2/1300	7,700 psi	
CCI 209 SC	Clays	WAA12SL	17.7/1200	18.5/1250	19.5/1300	21.0/1350	9,900 psi	
CCI 209 SC	International	WAA12SL		21.0/1250	22.0/1300	22.5/1350	8,500 psi	
Fed. 209A	Clays	Rem. TGT12		16.5/1200	17.7/1250	18.7/1300	7,400 psi	
Fio. 616	Clays	Fed. 12S0		16.6/1200	17.8/1250	19.2/1300	8,500 psi	
Win. 209	Clays	WAA12SL		16.8/1200	18.0/1250	19.0/1300	8,000 psi	
Winchester: Compression-Formed AA Type								
CCI 209	American Select	BP DX12		19.5/1200	19.7/1210	20.0/1230	9,900 psi	#1
CCI 209	American Select	BP Pisk		19.3/1200	19.5/1210	19.7/1225	9,800 psi	#2
CCI 209	Nitro-100	WAA12SL				18.5/1325	7,500 psi	#5, #7
CCI 209	R. Scot D	WAA12SL				21.5/1325	8,300 LUP	#7
CCI 209	Solo 1000	WAA12SL				20.5/1325	7,300 psi	#5, #7
CCI 209	WSL	WAA12SL				22.0/1400	10,000 psi	
CCI 209	WST	WAA12SL				23.5/1355	7,200 psi	
CCI 209M	Clays	Rem. TGT12		16.5/1200	17.5/1250	18.5/1300	8,900 psi	
CCI 209M	Nitro-100	WAA12SL				18.5/1325	7,300 psi	#5, #7
CCI 209M	R. Scot D	WAA12SL				20.5/1325	9,400 LUP	#7
CCI 209M	Solo 1000	WAA12SL				19.5/1325	8,400 psi	#5, #7
CCI 209 SC	Clays	Rem. TGT12		16.3/1200	17.6/1250	18.7/1300	7,800 psi	
Fed. 209	American Select	Claybuster				21.0/1300	7,200 psi	
Fed. 209	American Select	Fed. 12S0				21.0/1300	8,300 psi	
Fed. 209	American Select	Pat.Ctrl.Prpl.				20.5/1300	7,200 psi	
Fed. 209	American Select	Rem. TGT12				20.5/1300	7,600 psi	
Fed. 209	American Select	WAA12SL				20.5/1300	8,400 psi	
Fed. 209	American Select	WAAL Gray		18.5/1250	19.5/1300	22.0/1400	10,200 psi	
Fed. 209	Bullseye	Fed. 12S0				16.5/1200	7,400 psi	
Fed. 209	Bullseye	Rem. PT12				16.5/1200	7,100 psi	#3
Fed. 209	Bullseye	WAA12F1				16.5/1200	6,700 psi	#3
Fed. 209	Green Dot	Fed. 12S0				21.0/1300	8,900 psi	
Fed. 209	Green Dot	Pat.Ctrl.Prpl.				21.5/1300	7,900 psi	#3
Fed. 209	Green Dot	Rem. TGT12				21.0/1300	8,400 psi	
Fed. 209	Green Dot	WAA12SL				20.5/1300	8,800 psi	
Fed. 209	Green Dot	WAAL Gray				20.0/1300	8,300 psi	
Fed. 209	R. Scot D	WAA12SL				21.5/1325	8,600 LUP	#7
Fed. 209	Red Dot	Fed. 12S0				16.0/1200	8,000 psi	#3

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type								
Fed. 209	Red Dot	Rem. PT12				16.5/1200	7,300 psi	#3
Fed. 209	Red Dot	WAA12F1				16.5/1200	7,300 psi	
Fed. 209	Solo 1000	WAA12SL				21.5/1325	8,000 psi	#7
Fed. 209A	#2 Improved	WAA12SL				20.5/1325	8,700 psi	#5, #7
Fed. 209A	Clays	WAA12L		18.0/1250	18.5/1270	19.1/1300	9,300 psi	
Fed. 209A	Clays	WAA12SL		18.0/1250	19.0/1300	20.5/1350	10,800 psi	
Fed. 209A	International	WAA12SL		20.0/1250	21.0/1300	22.0/1350	9,500 psi	
Fed. 209A	Nitro-100	WAA12SL				18.0/1325	8,000 psi	#5, #7
Fed. 209A	Solo 1000	WAA12SL				19.5/1325	8,600 psi	#5, #7
Fed. 209A	WST	WAA12SL				23.5/1355	7,400 psi	
Fio. 615	WST	BP DX12				22.2/1240	9,600 LUP	#1
Fio. 615	R. Scot D	WAA12SL				20.5/1325	9,900 LUP	#7
Fio. 615	Green Dot	BP DX12				21.0/1250	9,200 LUP	#1
Fio. 615	Nitro-100	WAA12SL				18.5/1325	8,100 psi	#5, #7
Fio. 615	Solo 1000	WAA12SL				20.0/1325	8,400 psi	#5, #7
Fio. 615	WSL	BP DX12				20.0/1325	7,900 LUP	#1
Rem. 209P	Clays	Rem. TGT12		18.2/1200	18.5/1220	18.9/1250	6,800 LUP	
Rem. 209P	Nitro-100	WAA12SL				18.5/1325	7,900 psi	#5, #7
Rem. 209P	R. Scot D	WAA12SL				22.0/1325	9,300 LUP	#7
Rem. 209P	Solo 1000	WAA12SL				20.5/1325	8,800 psi	#5, #7
Win. 209	Alliant e3	Rem. TGT12				15.7/1200	7,380 psi	
Win. 209	Alliant e3	Claybuste 4100-12B				16.0/1200	6,870 psi	
Win. 209	Alliant e3	WAA12L (gray)				16.0/1200	7,425 psi	
Win. 209	Alliant e3	Rem. TGT12				16.5/1250	8,200 psi	
Win. 209	Alliant e3	Claybuster 4100-12B				17.0/1250	7,475 psi	
Win. 209	Alliant e3	WAA12L (gray)				17.0/1250	8,210 psi	
Win. 209	Alliant e3	WAA12L (gray)				18.0/1300	8,385 psi	
Win. 209	Alliant e3	Rem. TGT12				18.3/1300	8,730 psi	
Win. 209	Clays	BP DX12		17.0/1200	17.7/1245	18.5/1290	7,700 LUP	#1
Win. 209	Clays	Fed. 12S0		17.1/1200	18.0/1250	20.0/1300	10,700 psi	
Win. 209	Clays	WAA12L		18.3/1250	19.2/1300	20.5/1350	10,000 psi	
Win. 209	Clays	WAA12SL		16.9/1200	18.1/1250	19.7/1300	8,400 LUP	
Win. 209	Green Dot	BP DX12		19.5/1220	20.0/1260	20.5/1300	8,800 psi	#1
Win. 209	IMR 700-X	BP DX12		18.5/1225	18.7/1230	19.0/1235	9,800 LUP	#1
Win. 209	International	WAA12SL	20.5/1250	21.0/1300	21.5/1350	22.5/1400	10,200 psi	
Win. 209	Nitro-100	BP DX12		18.5/1240	18.7/1265	19.0/1290	8,600 psi	#1
Win. 209	Nitro-100	WAA12SL				18.0/1325	8,000 psi	#5, #7
Win. 209	R. Scot D	WAA12SL				20.5/1325	9,900 LUP	#7
Win. 209	Red Dot	BP DX12		17.0/1220	17.7/1260	18.5/1280	9,700 psi	#1
Win. 209	Red Dot	Fed. 12S0		16.0*/1200	17.5/1250	19.0/1300	9,400 psi	*#3
Win. 209	Red Dot	Pat.Ctrl.Prpl.		17.0/1200	18.0/1250	19.5/1300	9,000 psi	#3
Win. 209	Red Dot	Rem. TGT12		16.5/1200	18.0/1250	19.0/1300	9,300 psi	#
Win. 209	Red Dot	WAA12SL		16.5*/1200	18.0*/1250	19.0/1300	10,300 psi	*#3
Win. 209	Red Dot	WAAL Gray		16.5/1200	17.5/1250	18.5/1300	9,300 psi	
Win. 209	Solo 1000	BP DX12		19.5/1250	19.7/1275	20.0/1300	9,000 psi	#1
Win. 209	Solo 1000	WAA12SL				20.0/1325	8,200 psi	#5, #7
Win. 209	W 452AA	WAA12SL				19.0*/1210	7,100 LUP	*#8
Win. 209	WAAP	WAA12SL		21.0*/1325	21.9/1360	23.0/1400	8,600 psi	*#9
Win. 209	WSL	WAA12SL				22.0/1400	9,500 psi	
Win. 209	WST	WAA12SL		22.0*/1325	22.7/1360	23.5/1400	8,200 psi	*#9
Win. AATP	Clays	WAA12SL		16.5/1200	17.8/1250	19.0/1300	9,600 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type								
	Load Notes: #1 = Disperser-X. #2 = Piston Skeet. #3 = Add one 20-gauge, 0.135" card inside bottom of shotcup. #4 = Add two 20-gauge, 0.135" cards inside bottom of shotcup. #5 = Minimum overall length = 2 9/32", maximum crimp depth = 2/32". #6 = Minimum overall length 2 10/32", maximum crimp depth = 2/32". #7 = Special Instructions: To prevent concave or open crimps in these 7/8-ounce loads: lower press's pre-crimp die to gather more plastic (shortens final overall length); adjust pre-crimp to achieve OAL of 2 8/32" (2 9/32" for paper); where possible, lower final crimp tamp rod to achieve 3/32" crimp depth. #8 = This load requires zero wad pressure. #9 = This load duplicates Winchester's AA International loading.						
1 1/16 Ounce Lead Shot								
Winchester: Compression-Formed AA Type								
Win. 209	Nitro-100	BP HCDP	17.0/1200	17.5/1220	18.0/1255	18.5/1300	10,000 psi	#1
Win. 209	Solo 1000	BP HCDP	18.0/1160	18.5/1200	19.0/1230	20.0/1270	9,900 psi	#1
	Load Notes: #1 = Helix Cushion Platform.							
1 1/4 Ounce Lead Shot								
Ballistic Products: Multi-Hull 12 2A								
CCI 209	IMR PB	Z21-TC (Trap Commander)				26.5/1260	9,400 psi	COS12 overshot
CCI 209M	Herco	Two X12X + 122-2412 (1/4" CORK12)				30.5/1400	11,500 psi	COS12 overshot
CCI 209M	Herco	CE (green)				26.0/1233	8,700 psi	COS12 overshot
CCI 209M	Herco	HCD18				28.0/1315	9,700 psi	COS12 overshot: A+ Hunting Buffer
CCI 209M	Herco	HCD18				34.0/1355	10,400 psi	
CCI 209M	HS-6	LB12-2				26.0/1290	10,400 psi	
CCI 209M	Herco	STS + 1/8 WF20				26.0/1290	10,300 psi	
CCI 209M	HS-6	STS + 1/8 WF20				33.5/1330	10,500 psi	
CCI 209M	IMR SR-4756	STS + 1/8 WF20				31.0/1305	10,400 psi	
CCI 209M	IMR 800-X	Z21-TC (Trap Commander)				27.0/1300	9,800 psi	COS12 overshot
CCI 209M	Longshot	Z21-TC (Trap Commander)				31.0/1390	9,500 psi	COS12 overshot
M209	Herco	Three NC12 (.125) +23C (2/3" HCW)				31.0/1290	8,600 psi	COS12 overshot
M209	Herco	Air Wedge + two 122-2412 (1/4" CORK12)				31.0/1320	8,700 psi	COS12 overshot
M209	IMR SR-7625	Air Wedge + 122-2412 (1/4" CORK12)				31.0/1290	9,400 psi	COS12 overshot
M209	Herco	BPGS + BP12 + 1/4 WF20				29.0/1375	10,600 psi	COS12 overshot
M209	IMR PB	CE (green)				26.0/1350	11,200 psi	COS12 overshot
M209	Universal	CS12S				26.0/1190	9,300 psi	COS12 overshot
M209	Herco	HCD18				26.0/1200	7,800 psi	COS12 overshot
M209	Blue Dot	STS + 1/8 WF20				33.0/1200	8,600 psi	

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Ballistic Products: Multi-Hull 12 2A								
M209	Herco	STS + 1/8 WF20				26.0/1240	9,200 psi	
M209	HS-6	STS + 1/8 WF20				32.0/1265	9,800 psi	COS12 overshot
M209	IMR SR-4656	STS + 1/8 WF20				31.0/1250	9,400 psi	
M209	IMR SR-7625	X12X + two 122-2412 (1/4" CORK12)				31.0/1290	9,500 psi	COS12 overshot
M209	Herco	X12X + 1/4 cork12 + Xstream				27.0/1235	9,400 psi	COS12 overshot
M209	Herco	X12X + 1/4 cork12 + Xstream				30.0/1345	9,200 psi	COS12 overshot
M209	Unique	X12X + 23C12 (2/3" HCW)				23.0/1130	8,500 psi	COS12 overshot
M209	IMR 800-X	Z21-TC (Trap Commander)				27.0/1290	9,400 psi	COS12 overshot
M209	IMR 800-X	Z21-TC (Trap Commander)				29.0/1335	9,900 psi	COS12 overshot
M209	Longshot	Z21-TC (Trap Commander)				31.0/1380	9,200 psi	COS12 overshot
M209	IMR PB	Z21-TC (Trap Commander)				26.5/1300	10,200 psi	COS12 overshot
M209	Solo 1250	Z21-TC (Trap Commander)				22.0/1035	7,300 psi	COS12 overshot
Win. 209	HS-6	BPGS + BP12 + 1/8 WF20				34.0/1325	10,700 psi	COS12 overshot, Buffer 16g MX47
Win. 209	IMR PB	Z21-TC (Trap Commander)				26.5/1280	9,700 psi	COS12 overshot
Win. 209	Solo 1250	Z21-TC (Trap Commander)				22.0/1045	7,400 psi	COS12 overshot
Estate: Chedite (Low Base Wad)								
Fed. 209A	HS-6	Fiocchi TL1				34.5/1330	10,500 psi	
Fio. 616	Universal	WAA12F114	24.5/1220	24.8/1240	25.5/1255	25.5/1275	10,300 psi	
Win. 209	HS-6	Rem. Fig.-8				35.0/1330	9,400 psi	
Win. 209	Universal	Fed. 12S4	24.5/1220	24.8/1240	25.1/1255	25.5/1275	10,500 psi	
Federal: Gold Medal Plastic								
CCI 209	Solo 1250	Fed.12S4				26.5/1220	9,900 LUP	
CCI 209	Universal	Fed.12S4				25.0/1220	10,100 psi	
CCI 209	WSF	Fed.12S4	27.0/1255	27.8/1280	28.7/1305	29.5/1330	10,600 psi	
CCI 209M	Blue Dot	Fed.12S4	35.0/1275	35.8/1295	36.6/1310	37.5/1330	8,300 psi	
CCI 209M	Herco	Fed.12S4				25.5/1220	8,700 psi	
CCI 209M	Solo 1250	Fed.12S4				25.5/1220	10,400 LUP	
CCI 209M	SR-4756	Rem.SP12				31.0/1215	6,300 LUP	
CCI 209M	SR-7625	Rem.SP12	28.0/1225	28.8/1255	29.6/1290	30.5/1320	7,600 LUP	
CCI 209M	Unique	Fed.12S4				24.5/1220	9,500 psi	
CCI 209SC	Universal	Fed.12S4				24.0/1220	9,500 psi	
Fed.209	HS-6	Fed.12S4	32.0/1220	33.0/1255	34.0/1295	35.0/1330	10,400 LUP	
Fed.209	IMR 700-X	Fed.12S4				20.5/1220	10,900 LUP	
Fed.209	IMR 700-X	Rem.R12H				21.0/1225	10,300 LUP	
Fed.209	IMR 800-X	Fed.12S3				25.0/1235	8,300 LUP	

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Gold Medal Plastic								
Fed.209	IMR 800-X	Fed.12S4				27.5/1325	9,700 LUP	
Fed.209	IMR 800-X	Lage Uniwad	25.5/1235	26.3/1265	27.1/1290	28.0/1320	8,900 LUP	
Fed.209	IMR 800-X	Rem.R12H	25.0/1220	26.0/1255	27.0/1290	28.0/1325	8,900 LUP	
Fed.209	IMR 800-X	WAA12F114	25.0/1225	26.0/1260	27.0/1295	28.0/1330	8,900 LUP	
Fed.209	IMR PB	Rem. SP12	26.0/1235	27.0/1270	28.0/1300	29.0/1335	10,200 LUP	
Fed.209	Solo 1250	Fed.12S4	26.0/1220	26.5/1240	27.0/1255	27.5/1275	10,900 LUP	
Fed.209	Solo 1250	Rem.SP12				26.5/1220	10,100 LUP	
Fed.209	SR-4756	Rem.RP12				34.0/1325	7,500 LUP	
Fed.209	SR-4756	Rem.SP12				30.5/1215	6,300 LUP	
Fed.209	SR-4756	WAA12R				34.5/1325	7,300 LUP	
Fed.209	SR-7625	Rem.SP12	28.5/1230	29.3/1260	30.1/1295	31.0/1325	7,700 LUP	
Fed.209	Universal	Fed.12S4				25.0/1220	9,300 psi	
Fed.209A	Blue Dot	Fed.12S4				34.0/1275	8,900 psi	
Fed.209A	Herco	Fed.12S4				25.0/1220	10,200 psi	
Fed.209A	Herco	Rem.SP12	26.0/1220	26.3/1240	26.6/1255	27.0/1275	10,100 psi	
Fed.209A	Herco	WAA12F114	25.0/1220	25.7/1240	26.4/1255	27.0/1275	10,500 psi	
Fed.209A	Unique	Fed.12S4				24.0/1220	10,500 psi	
Fed.209A	Unique	Rem.SP12				24.0/1220	10,400 psi	
Fed.209A	Unique	WAA12F114				24.0/1220	10,600 psi	
Fed.209A	Universal	Fed.12S4				23.3/1220	10,400 psi	
Fio.616	Universal	Rem.SP12				24.7/1220	9,200 psi	
Rem.209P	Blue Dot	Fed.12S4				35.0/1330	10,500 psi	
Rem.209P	Herco	Fed.12S4	25.5/1220	26.2/1240	26.9/1255	27.5/1275	9,200 psi	
Rem.209P	Unique	Fed.12S4				25.0/1220	9,800 psi	
Win.209	Blue Dot	Fed.12S4	35.0/1275	35.7/1295	36.4/1310	37.0/1330	9,000 psi	
Win.209	Herco	Fed.12S4				25.5/1220	9,400 psi	
Win.209	HS-6	WAA12F114	32.0/1220	32.8/1255	33.6/1295	34.5/1330	10,100 LUP	
Win.209	IMR 700-X	Fed.12S4				20.5/1215	10,500 LUP	
Win.209	IMR 700-X	Rem.R12H				21.0/1225	9,900 LUP	
Win.209	IMR PB	Rem.SP12	26.0/1235	27.0/1270	28.0/1310	29.0/1345	10,400 LUP	
Win.209	Solo 1250	Fed.12S4				26.0/1220	10,100 LUP	
Win.209	Solo 1500	WAA12R				34.5/1330	10,500 LUP	
Win.209	Unique	Fed.12S4				24.0/1220	9,500 psi	
Win.209	Universal	WAA12F114				24.5/1220	10,300 psi	
Win.209	WSF	Fed.12S4				31.5/1330	9,500 psi	
Federal: One-Piece Plastic Hunting (Hi-Power)								
CCI209M	Blue Dot	Fed.12S4				37.5/1330	9,000 psi	
CCI209M	Herco	Fed.12S4	26.0/1220	26.5/1240	27.0/1255	27.5/1275	9,500 psi	
CCI209M	Unique	Fed.12S4				25.5/1220	9,200 psi	
Fed.209A	Blue Dot	Fed.12S4				38.5/1330	8,500 psi	
Fed.209A	Blue Dot	WAA12F114				39.0/1330	7,700 psi	
Fed.209A	Herco	Fed.12S4	26.0/1220	26.7/1240	27.4/1255	28.0/1275	9,500 psi	
Fed.209A	Herco	Rem.SP12	26.5/1220	26.8/1240	27.1/1255	27.5/1275	8,300 psi	
Fed.209A	Herco	WAA12F114	26.0/1220	26.5/1240	27.0/1255	27.5/1275	8,700 psi	
Fed.209A	Unique	Fed.12S4				25.0/1220	9,100 psi	
Fed.209A	Unique	Rem.SP12				25.5/1220	8,700 psi	
Fed.209A	Unique	WAA12F114				25.0/1220	8,700 psi	
Rem.209	Herco	Fed.12S4	26.5/1220	27.2/1240	27.9/1255	28.5/1275	9,400 psi	
Rem.209	Unique	Fed.12S4				25.5/1220	8,800 psi	
Win.209	Blue Dot	Fed.12S4				39.0/1330	8,400 psi	
Win.209	Herco	Fed.12S4	26.0/1220	26.5/1240	27.0/1255	27.5/1275	9,000 psi	

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: One-Piece Plastic Hunting (Hi-Power)								
Win.2009	Unique	Fed/12S4				25.0/1220	9,200 psi	
Federal: Plastic (Paper Base Wad)								
CCI209M	Blue Dot	Fed.12S4				38.0/1330	9,800 psi	
CCI209M	Herco	Fed.12S4				30.0/1330	9,500 psi	
CCI209M	Unique	Fed.12S4				25.0/1220	10,000 psi	
CCI209M	Universal	Rem.SP12				25.5/1220	7,900 psi	
Fed.209	IMR PB	RemRP12	25.5/1230	26.7/1265	27.9/1300	29.0/1335	10,900 LUP	
Fed.209	IMR PB	WAA12R	25.5/1215	26.7/1255	27.9/1290	29.0/1330	10,200 LUP	
Fed.209	Solo 1500	Fed.12S4				36.0/1330	10,900 LUP	
Fed.209	SR-4756	Rem.SP12				36.0/1330	8,200 LUP	
Fed.209	SR-4756	Rem.SP12				32.5/1225	7,000 LUP	
Fed.209	SR-4756	WAA12R	33.0/1225	34.2/1260	35.4/1295	36.5/1330	7,800 LUP	
Fed.209	SR-7625	Rem. RP12				30.0/1320	9,200 LUP	
Fed.209	SR-7625	Rem. SP12				27.5/1225	7,500 LUP	
Fed.209	SR-7625	WAA12R	27.5/1215	28.7/1250	29.9/1290	31.0/1325	8,600 LUP	
Fed.209A	Green Dot	Fed.12S4				23.0/1220	9,800 psi	
Fed.209A	Green Dot	H.Versalite				23.0/1220	9,700 psi	
Fed.209A	Green Dot	Rem.R12H				22.0/1220	10,500 psi	
Fed.209A	Green Dot	RemRXP12				22.0/1220	9,600 psi	
Fed.209A	Green Dot	WAA12				21.5/1220	9,500 psi	
Fed.209A	Green Dot	WAA12F114				23.0/1220	9,900 psi	
Fed.209A	Herco	Fed.12C1				28.5/1330	9,800 psi	
Fed.209A	Herco	Fed.12S4				29.0/1330	10,000 psi	
Fed.209A	Herco	Rem.SP12				28.5/1330	9,900 psi	
Fed.209A	Herco	WAA12				29.0/1330	10,500 psi	
Fed.209A	Herco	WAA12F114				29.5/1330	9,400 psi	
Fed.209A	Unique	Fed.12C1	23.0/1220	23.8/1255	24.6/1295	25.5/1330	10,200 psi	
Fed.209A	Unique	Fed.12S4				23.0/1220	9,500 psi	
Fed.209A	Unique	H.Versalite				23.5/1220	8,800 psi	
Fed.209A	Unique	Rem.RXP12				23.0/1220	8,300 psi	
Fed.209A	Unique	Rem.SP12				25.5/1330	10,200 psi	
Fed.209A	Unique	WAA12				23.0/1220	9,600 psi	
Fed.209A	Unique	WAA12F114				23.0/1220	9,400 psi	
Fed.209A	Universal	Fed/12S4				24.0/1220	10,300 psi	
Fio.616	Universal	Fed.12S4				26.0/1220	8,900 psi	
Rem.209P	Unique	Fed.12S4				25.5/1220	9,000 psi	
Win.209	Blue Dot	Fed.12S4				38.0/1330	8,600 psi	
Win.209	Herco	Fed.12S4				30.0/1330	10,200 psi	
Win.209	Unique	Fed.12S4				25.0/1220	9,500 psi	
Win.209	Universal	Fed.12S4				25.2/1220	8,800 psi	
Win.209	Universal	WAA12F114				25.5/1220	9,400 psi	
Fio.616	Universal	Fed.12S4				26.0/1220	8,900 psi	
Rem.209P	Unique	Fed.12S4				25.5/1220	9,000 psi	
Win.209	Blue Dot	Fed.12S4				38.0/1330	8,600 psi	
Win.209	Herco	Fed.12S4				30.0/1330	10,200 psi	
Win.209	Unique	Fed.12S4				25.0/1220	9,500 psi	
Win.209	Universal	Fed.12S4				25.2/1220	8,800 psi	
Win.209	Universal	WAA12F114				25.5/1220	9,400 psi	

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Fiocchi: Purple Target (High Base Wad)								
CCI209	Solo 1250	Rem.SP12				33.0/1330	10,400 LUP	
CCI209M	Green Dot	Rem.R12H				24.5/1220	8,000 psi	
CCI209M	Herco	Rem.SP12	28.0/1275	28.7/1285	29.4/1290	30.0/1300	9,200 psi	
Fed.209	Blue Dot	Fed.12S4				37.0/1300	8,800 psi	
Fed.209	Green Dot	Fed.12S4				23.0/1220	10,000 psi	
Fed.209	Herco	Fed.12S4	27.5/1275	28.3/1285	29.1/1290	30.0/1300	10,300 psi	
Fed.209	Solo 1250	Rem.SP12				32.5/1330	10,400 LUP	
Fed.209	Solo 1250	Rem.SP12				32.5/1330	10,400 LUP	
Fed.209	Unique	Fed.12S4	24.5/1220	24.9/1235	25.3/1250	26.0/1275	10,100 psi	
Fed.209	Universal	Rem.SP12				24.0/1220	10,200 psi	
Fio.616	Blue Dot	Fed.12S4				40.0/1300	8,300 psi	
Fio.616	Blue Dot	Rem.SP12				41.0/1300	7,700 psi	
Fio.616	Blue Dot	WAA12F114				39.5/1300	7,500 psi	
Fio.616	Green Dot	Fed.12S4				23.0/1220	9,700 psi	
Fio.616	Herco	Fed.12S4	28.0/1275	28.7/1285	29.4/1290	30.0/1300	9,500 psi	
Fio.616	Herco	Rem.SP12				30.5/1300	8,600 psi	
Fio.616	Herco	WAA12F114				30.0/1300	9,200 psi	
Fio.616	Solo 1250	Fed.12S4	26.5/1220	27.2/1240	27.9/1255	28.5/1275	10,500 LUP	
Fio.616	Solo 1250	Rem.SP12	29.5/1275	30.5/1295	31.5/1310	32.5/1330	10,400 LUP	
Fio.616	Solo 1250	WAA12	26.5/1220	27.2/1240	27.9/1255	28.5/1275	10,500 LUP	
Fio.616	Unique	Fed.12S4	25.0/1220	25.5/1235	26.0/1250	27.0/1275	10,900 psi	
Win.209	Blue Dot	WAA12F114				38.5/1300	8,300 psi	
Win.209	Green Dot	WAA12F114				23.0/1220	10,000 psi	
Win.209	Herco	WAA12F114	28.0/1275	28.7/1285	29.4/1290	30.0/1300	10,100 psi	
Win.209	HS-6	Rem.12H				35.0/1330	9,200 LUP	
Win.209	Solo 1250	Fed.12S4				26.5/1220	9,900 LUP	
Win.209	Solo 1250	Rem.SP12				32.5/1330	10,400 LUP	
Win.209	Solo 1250	Rem.SP12				32.5/1330	10,400 LUP	
Win.209	Unique	WAA12F114	25.0/1220	25.5/1235	26.0/1250	27.0/1275	10,000 psi	
Win.209	Universal	Rem.SP12				24.0/1220	10,900 psi	
	Load notes: #1 = minimum overal length is 2 10/32"; maximum crimp depth is 2/32". #2 = minimum overall length is 2 9/32", maximum crimp depth is 2/32".							
Remington: Premier & Nitro 27 & STS								
CCI209	Solo 1250	Rem.SP12				25.0/1220	9,900 LUP	
CCI209	Universal	Rem.SP12				23.7/1220	9,200 psi	
CCI209	WSF	WAA12F114	25.5/1220	27.0/1255	27.8/1295	28.5/1330	10,900 psi	
CCI209M	Blue Dot	Rem.SP12	34.5/1275	34.8/1295	35.1/1310	35.5/1330	10,300 psi	
CCI209M	Herco	Rem.SP12				24.5/1220	10,000 psi	
CCI209M	Unique	Rem.SP12				23.5/1220	10,300 psi	
Fed.209	Blue Dot	Rem.SP12	35.0/1275	35.5/1295	36.0/1310	36.5/1330	9,700 psi	
Fed.209	Herco	Rem.SP12				25.0/1220	9,800 psi	
Fed.209	Unique	Rem.SP12				23.0/1220	9,900 psi	
Fed.209	Universal	Fed.12S4				23.5/1220	9,900 psi	
Fed.209	WSF	RemRXP12	28.0/1255	28.5/1280	29.0/1305	29.5/1330	10,700 psi	
Fed.209	WSF	WAA12F114	26.5/1220	28.0/1255	28.8/1295	29.5/1330	10,200 psi	
Fed.209A	Universal	Rem.SP12				22.5/1220	11,300 psi	
Fio.616	Blue Dot	Rem.SP12	35.5/1275	35.5/1295	35.5/1310	35.5/1330	9,900 psi	
Fio.616	Herco	Rem.SP12				24.5/1220	9,900 psi	
Fio.616	Unique	Rem.SP12				23.0/1220	9,500 psi	
Rem.209P	Blue Dot	Fed.12S4				34.0/1275	10,100 psi	
Rem.209P	Blue Dot	Rem.SP12	34.5/1275	35.5/1295	36.5/1310	37.5/1330	9,700 psi	
Rem.209P	Herco	Fed.12S4				25.0/1220	10,400 psi	
Rem.209P	Herco	H.Versalite				25.0/1220	8,400 psi	
Rem.209P	Herco	Rem.SP12				25.0/1220	9,600 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

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Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: Premier & Nitro 27 & STS								
Rem.209P	Herco	WAA12F114	24.5/1220	25.2/1240	25.9/1255	26.5/1275	10,500 psi	
Rem.209P	Solo 1250	Rem.SP12				25.0/1220	9,700 LUP	
Rem.209P	Solo 1250	Rem.SP12	25.0/1220	25.5/1240	26.0/1255	26.5/1275	10.600 LUP	
Rem.209P	Unique	Fed.12S4				23.0/1220	10,700 psi	
Rem.209P	Unique	H.Versalite				23.5/1220	9,400 psi	
Rem.209P	Unique	WAA12F114				24.0/1220	10,100 psi	
Rem.209P	Universal	Rem.SP12				24.0/1220	9,600 psi	
Win.209	Blue Dot	Rem.SP12	35.5/1275	35.8/1295	36.1/1310	36.5/1330	9,900 psi	
Win.209	Herco	Rem.SP12	24.5/1220	25.0/1240	25.5/1255	26.0/1275	10,600 psi	
Win.209	HS-6	RemR12H	32.0/1220	32.7/1255	33.4/1295	34.0/1330	10,200 LUP	
Win.209	HS-6	WAS12F114	32.0/1220	32.7/1255	33.4/1295	34.0/1330	10,400 LUP	
Win.209	Solo 1250	Rem.SP12				25.0/1220	10,100 LUP	
Win.209	Unique	Rem.SP12				23.5/1220	10,000 psi	
Win.209	Universal	WAS12F114				23.4/1220	10,900 psi	
Win.209	WSF	WAS12F114	27.5/1255	28.2/1280	28.8/1305	29.5/1330	10,400 psi	
Remington: RXP								
Win.209	W473AA	Fed.12C1				25.0/1220	10,300 LUP	
Win.209	W473AA	Rem.RXP12				25.0/1220	10,400 LUP	
Win.209	W473AA	WAA12				25.0/1220	10,300 LUP	
Win.209	W540	Fed.12S1				33.5/1330	10,000 LUP	
Win.209	W540	Rem.RXP12				34.5/1330	9,700 LUP	
Win.209	W540	WAA12				33.5/1330	10,300 LUP	
Win.209	W540	WAA12F114	29.0/1220	30.0/1255	30.5/1295	31.0/1330	10,300 LUP	
Remington: Unibody (Integral Plastic Base Wad)								
CCI209	Blue Dot	Rem.RP12				37.5/1330	9,700 psi	
CCI209	Blue Dot	Rem.SP12				35.5/1275	8,900 psi	
CCI209	Herco	Rem.SP12				25.5/1220	9,100 psi	
CCI209	IMR PB	Rem.SP12				24.0/1220	9,900 LUP	
CCI209	IMR PB	WAA12R				24.5/1230	9,500 LUP	
CCI209	SR-7625	Rem.RP12	26.0/1220	26.7/1250	27.4/1285	28.0/1315	10,500 LUP	
CCI209	SR-7625	WAA12R	26.5/1225	27.5/1265	28.5/1305	29.5/1345	10,600 LUP	
CCI209	Unique	Rem.SP12				24.5/1220	9,600 psi	
CCI209M	Blue Dot	Rem.RP12				35.5/1330	10,400 psi	
CCI209M	Blue Dot	Rem.SP12	32.0/1220	32.5/1240	33.0/1255	33.5/1275	9,800 psi	
CCI209M	IMR 800-X	Lage Uniwad	24.0/1225	25.2/1260	26.4/1295	27.5/1330	10,900 LUP	
CCI209M	IMR 800-X	Rem.SP12				27.0/1325	10,600 LUP	
CCI209M	Unique	Rem.SP12				23.0/1220	10,100 psi	
Fed.209	Blue Dot	Rem.SP12	31.5/1220	31.8/1240	32.1/1255	32.5/1275	10,600 psi	
Fed.209	Herco	Rem.SP12				23.5/1220	10,400 psi	
Fed.209	IMR PB	Rem.RP12				23.0/1210	10,800 LUP	
Fed.209	IMR PB	WAA12R				23.0/1210	10,600 LUP	
Fed.209	SR-4756	Rem.RP12	28.5/1220	29.5/1255	30.5/1295	31.5/1330	10,900 LUP	
Fed.209	SR-4756	WAA12R	29.0/1215	30.0/1250	31.0/1290	32.0/1325	10,500 LUP	
Fed.209	SR-7625	Rem.RP12				25.0/1215	8,900 LUP	
Fed.209	SR-7625	WAA12R				25.5/1225	8,900 LUP	
Fed.209	Unique	Rem.SP12				22.5/1220	10,700 psi	
Rem.209	Blue Dot	Rem.SP12				32.0/1275	10,200 psi	
Rem.209	Blue Dot	WAA12F114	30.0/1220	30.7/1240	31.4/1255	32.0/1275	10,000 psi	
Rem.209	Herco	Rem.SP12				23.5/1220	9,400 psi	
Rem.209	Herco	WAA12F114				23.0/1220	10,100 psi	

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Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: Unibody (Integral Plastic Base Wad)								
Rem.209	Unique	Rem.SP12				22.5/1220	9,700 psi	
Rem.209P	IMR 800X	Rem.SP12				25.0/1220	9,300 LUP	
Win.209	Blue Dot	Rem.SP12	33.0/1220	33.7/1240	34.4/1255	35.0/1275	10,300 psi	
Win.209	Herco	Rem.SP12				24.5/1220	10,500 psi	
Win.209	SR-4756	Rem.SP12	29.5/1215	30.7/1255	31.9/1300	33.0/1340	10,300 LUP	
Win.209	SR-4756	WAA12R	30.5/1215	31.5/1250	32.5/1290	33.5/1325	9,800 LUP	
Win.209	Unique	Rem.SP12				23.0/1220	10,600 psi	
Winchester: Compression-Formed AA Type								
CCI109	W473AA	WAA12				24.5/1220	9,800 LUP	
CCI109	W540	WAA12				34.5/1330	10,800 LUP	
CCI209	Solo 1250	WAA12R				26.0/1220	10,100 LUP	
CCI209	Universal	WAA12F114				23.5/1220	10,000 psi	
CCI209	WSF	Rem.RXP12				29.0/1275	10,400 psi	
CCI209	WSF	Rem.SP12				28.0/1330	9,800 psi	
CCI209M	Blue Dot	WAA12F114	35.0/1275	35.5/1295	36.0/1310	36.5/1330	9,500 psi	
CCI209M	Herco	WAA12F114	24.0/1220	25.0/1240	26.0/1255	27.0/1275	10,700 psi	
CCI209M	Unique	WAA12F114				23.5/1220	9,900 psi	
CCI209SC	Universal	WAA12F114				22.0/1220	10,700 psi	
Fed.209	Blue Dot	WAA12F114	32.0/1275	32.5/1295	33.0/1310	33.5/1330	10,500 psi	
Fed.209	Herco	WAA12F114	24.0/1220	24.7/1240	25.4/1255	26.0/1275	10,700 psi	
Fed.209	IMR 800-X	Fed.12S4				24.5/1225	9,900 LUP	
Fed.209	IMR 800-X	H.Versalite				27.5/1325	10,900 LUP	
Fed.209	IMR 800-X	H.Versalite				24.5/1230	9,400 LUP	
Fed.209	IMR 800-X	Lage Uniwad	25.0/1230	26.0/1265	27.0/1295	28.0/1330	10,900 LUP	
Fed.209	IMR 800-X	Rem.SP12	24.5/1220	25.7/1260	26.9/1295	28.0/1335	10,800 LUP	
Fed.209	IMR 800-X	WAA12F114	24.5/1220	25.5/1255	26.5/1295	27.5/1330	10,900 LUP	
Fed.209	IMR 800-X	Windjammer	24.5/1210	25.7/1250	26.9/1295	28.0/1335	9,700 LUP	
Fed.209	IMR PB	Rem.RP12				23.5/1210	10,000 LUP	
Fed.209	IMR PB	WAA12R				24.5/1220	9,500 LUP	
Fed.209	Solo 1250	WAA12R				25.5/1220	10,200 LUP	
Fed.209	SR-4756	Rem.RP12	30.0/1220	31.0/1255	32.0/1295	33.0/1330	10,000 LUP	
Fed.209	SR-4756	WAA12R	31.0/1225	31.8/1255	32.6/1290	33.5/1320	9,300 LUP	
Fed.209	SR-7625	Rem.RP12				28.5/1320	10,800 LUP	
Fed.209	SR-7625	Rem.SP12				26.0/1215	8,600 LUP	
Fed.209	SR-7625	WAA12R	26.5/1225	27.5/1260	28.5/1295	29.5/1330	10,300 LUP	
Fed.209	Unique	WAA12F114				23.0/1220	10,000 psi	
Fed.209	Universal	Fed.12S4				23.5/1220	10,200 psi	
Fed.209	W473AA	WAA12				25.0/1220	10,500 LUP	
Fed.209A	Solo 1250	WAA12R				25.5/1220	10,200 LUP	
Fio.616	Blue Dot	WAA12F114				34.0/1275	8,600 psi	
Fio.616	Herco	WAA12F114	25.0/1220	25.3/1240	25.6/1255	26.0/1275	10,100 psi	
Fio.616	Unique	WAA12F114				23.0/1220	10,300 psi	
Fio.616	Universal	Rem.SP12				24.5/1220	9,600 psi	
Rem.209P	Herco	WAA12F114	25.5/1220	26.0/1240	26.5/1255	27.0/1275	9,400 psi	
Rem.209P	Solo 1250	WAA12R				25.5/1220	10,300 LUP	
Rem.209P	Unique	WAA12F114				24.0/1220	10,000 psi	
Win.209	Blue Dot	Fed.12S4				34.0/1275	10,500 psi	
Win.209	Blue Dot	Rem.RP12				38.0/1330	10,200 psi	
Win.209	Blue Dot	Rem.RP12	35.0/1275	35.7/1295	36.4/1310	37.0/1330	10,300 psi	
Win.209	Blue Dot	WAA12F114				34.5/1275	9,900 psi	

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Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type								
Win.209	Blue Dot	WAA12F114				37.0/1330	10,600 psi	
Win.209	Herco	Fed.12S4	25.0/1220	25.3/1240	25.6/1255	26.0/1275	10,700 psi	
Win.209	Herco	H.Versalite				25.5/1220	8,500 psi	
Win.209	Herco	WAA12F114	25.0/1220	25.5/1240	26.0/1255	26.5/1275	10,700 psi	
Win.209	HS-6	Fed.12C1	32.0/1220	33.0/1255	34.0/1255	35.0/1330	10,400 psi	
Win.209	HS-6	Rem.R12H	31.5/1220	32.7/1255	33.9/1295	35.0/1330	10,600 LUP	
Win.209	HS-6	WAA12F114	30.0/1220	31.0/1255	32.0/1295	33.0/1330	10,500 LUP	
Win.209	IMR 800-X	Fed.12S4				24.5/1215	9,200 LUP	
1 3/8 Ounce Lead Shot								
Ballistic Products: Multi-Hull 12 2A								
CCI 209M	Herco	STS				26.5/1280	11,000 psi	
M209	Herco	(2)17C(.160NC) +12HCW(1/2")				28.0/1125	8,300 psi	COS12 overshot
M209	Herco	AirWedge+ 122-2412 (1/4"CORK12)				28.0/1220	9,300 psi	
M209	IMR SR-4756	AirWedge+ 38C12(HCW)				30.0/1150	8,900 psi	COS12 overshot
Win. 209	Herco	STS				26.5/1285	11,000 psi	
Federal: Gold Medal Plastic								
Fed. 209A	IMR PB	Rem. SP12	22.5/1175				10,900 psi	
Fed. 209A	IMR PB	WAA12R	22.5/1175				10,800 psi	
Fed. 209A	IMR SR-7625	Rem. SP12	25.0/1175				11,200 psi	
Fed. 209A	IMR SR-7625	WAA12R		26.0/1200			11,000 psi	
Fed. 209A	IMR SR-4756	Rem. SP12				30.0/1250	10,900 psi	
Fed. 209A	IMR SR-4756	WAA12R	31.5/1300				11,000 psi	
Fed. 209A	IMR 800-X	Fed. 12S4	25.0/1225				10,900 psi	
Fed. 209A	IMR 800-X	Rem. SP12		26.5/1275			11,000 psi	
Fed. 209A	IMR 800-X	WAA12R		26.0/1275			11,000 psi	
Rem. 209	IMR PB	Rem. SP12		24.5/1200			11,000 psi	
Rem. 209	IMR PB	WAA12R				26.5/1250	11,000 psi	
Rem. 209	IMR SR-7625	Rem. SP12				28.0/1250	11,100 psi	
Rem. 209	IMR SR-7625	WAA12R				28.5/1250	11,000 psi	
Rem. 209	IMR SR-4756	Rem. SP12			34.5/1225		10,900 psi	
Rem. 209	IMR SR-4756	WAA12R			35.0/1225		10,500 psi	
Rem. 209	IMR 800-X	Fed. 12S4		26.5/1275			11,000 psi	
Rem. 209	IMR 800-X	Rem. SP12		26.0/1275			11,000 psi	
Rem. 209	IMR 800-X	WAA12R		27.0/1275			9,700 psi	
Win. 209	IMR PB	Rem. SP12	23.5/1175				11,100 psi	
Win. 209	IMR PB	WAA12R		24.0/1200			11,000 psi	
Win. 209	IMR SR-7625	Rem. SP12		26.5/1200			11,200 psi	
Win. 209	IMR SR-7625	WAA12R		27.0/1200			11,000 psi	
Win. 209	IMR SR-4756	Rem. SP12		33.0/1325			11,200 psi	
Win. 209	IMR SR-4756	WAA12R		34.0/1325			11,000 psi	
Win. 209	IMR 800-X	Fed. 12S4	26.0/1275				11,000 psi	
Win. 209	IMR 800-X	Rem. SP12		29.0/1325			10,900 psi	
Win. 209	IMR 800-X	WAA12R		27.5/1325			11,000 psi	

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Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: STS, Nitro 27 or Gun Club Plastic								
Fed. 209A	IMR PB	Rem. SP12	19.5/1100				11,000 psi	
Fed. 209A	IMR PB	WAA12R	19.5/1100				10,900 psi	
Fed. 209A	IMR SR-7625	Rem. SP12	22.0/1100				11,200 psi	
Fed. 209A	IMR SR-7625	WAA12R	21.5/1100				10,800 psi	
Fed. 209A	IMR SR-4756	Rem. SP12				26.0/1200	11,000 psi	
Fed. 209A	IMR SR-4756	WAA12R				26.0/1200	11,100 psi	
Fed. 209A	IMR 800-X	Rem. SP12			22.5/1200		11,000 psi	
Fed. 209A	IMR 800-X	WAA12R			23.0/1200		11,100 psi	
Rem. 209P	IMR PB	Rem. SP12		21.0/1150			11,000 psi	
Rem. 209P	IMR PB	WAA12R		21.5/1150			10,900 psi	
Rem. 209P	IMR SR-7625	Rem. SP12			24.5/1200		10,800 psi	
Rem. 209P	IMR SR-7625	WAA12R			25.0/1200		11,000 psi	
Rem. 209P	IMR SR-4756	Rem. SP12				30.0/1250	10,900 psi	
Rem. 209P	IMR SR-4756	WAA12R				30.5/1300	11,100 psi	
Rem. 209P	IMR 800-X	Fed. 12S4	24.0/1225				11,100 psi	
Rem. 209P	IMR 800-X	Rem. SP12			26.5/1275		11,000 psi	
Rem. 209P	IMR 800-X	WAA12R			25.5/1275		11,100 psi	
Win. 209	IMR PB	Rem. SP12	20.5/1100				11,100 psi	
Win. 209	IMR PB	WAA12R	21.5/1150				11,000 psi	
Win. 209	IMR SR-7625	Rem. SP12		23.0/1150			11,100 psi	
Win. 209	IMR SR-7625	WAA12R		23.5/1150			10,900 psi	
Win. 209	IMR SR-4756	Rem. SP12				29.0/1250	11,100 psi	
Win. 209	IMR SR-4756	WAA12R				28.5/1250	10,900 psi	
Win. 209	IMR 800-X	Rem. SP12	24.0/1225				11,000 psi	
Win. 209	IMR 800-X	WAA12R		24.5/1250			10,900 psi	
Winchester: Compression-Formed AA Type								
Fed. 209A	IMR SR-4756	Rem. SP12	27.5/1200				11,200 psi	
Fed. 209A	IMR SR-4756	WAA12R	27.0/1200				10,900 psi	
Fed. 209A	IMR 800-X	Fed. 12S4	22.5/1200				11,100 psi	
Fed. 209A	IMR 800-X	Rem. SP12		25.0/1250			11,100 psi	
Fed. 209A	IMR 800-X	WAA12R		25.5/1250			11,000 psi	
Rem. 209P	IMR SR-4756	Rem. SP12		31.0/1250			10,900 psi	
Rem. 209P	IMR SR-4756	WAA12R			32.0/1300		10,600 psi	
Rem. 209P	IMR 800-X	Fed. 12S4			27.0/1300		11,100 psi	
Rem. 209P	IMR 800-X	Rem. SP12				30.0/1350	11,200 psi	
Rem. 209P	IMR 800-X	WAA12R			29.0/1300		10,100 psi	
Win. 209	IMR SR-4756	Rem. SP12		28.5/1250			11,000 psi	
Win. 209	IMR SR-4756	WAA12R		30.0/1250			11,200 psi	
Win. 209	IMR 800-X	Fed. 12S4	23.5/1200				11,100 psi	
Win. 209	IMR 800-X	Rem. SP12		26.0/1250			11,100 psi	
Win. 209	IMR 800-X	WAA12R			26.0/1300		11,000 psi	
1 1/2 oz. Lead Shot								
Chedite: Low Base Wad								
Fio.616	HS-7	WAA12R				36.0/1260	10,600 psi	
Win.209	HS-7	WAA12R				36.0/1260	10,600 psi	
Federal: Gold Medal Plastic								
CCI209M	Blue Dot	Rem.RP12				34.0/1205	9,400 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Gold Medal Plastic								
CCI209M	IMR 800-X	Rem.RP12				27.5/1245	10,800 LUP	
CCI209M	IMR 800-X	WAA12R				27.0/1265	10,600 LUP	
Fed.209	HS-7	Fed.12S4				37.0/1260	10,900 LUP	
Fed.209	IMR 800-X	Rem.RP12				27.5/1255	10,900 LUP	
Fed.209	IMR 800-X	WAA12R				27.0/1270	10,800 LUP	
Fed.209	IMR SR-4756	BP BPGS				32.0/1245	9,900 LUP	
Fed.209A	Blue Dot	Rem.RP12	33.5/1150	33.7/1170	33.9/1185	34.0/1205	9,700 psi	
Fed.209A	Herco	Rem.RP12				25.5/1150	10,100 psi	
Fed. 209A	IMR SR-7625	Rem. RP12	25.0/1150				11,400 psi	
Fed. 209A	IMR SR-7625	WAA12R	25.5/1150				11,200 psi	
Fed. 209A	IMR SR-4756	Rem. RP12		27.5/1175			11,000 psi	
Fed. 209A	IMR SR-4756	WAA12R		28.0/1175			11,100 psi	
Fed. 209A	IMR 800-X	Fed. 12S4			24.5/1200		11,200 psi	
Fed. 209A	IMR 800-X	Rem. RP12				26.5/1225	11,000 psi	
Fed. 209A	IMR 800-X	WAA12R				26.0/1225	11,200 psi	
Rem. 209P	IMR SR-7625	Rem. RP12		27.5/1175			11,100 psi	
Rem. 209P	IMR SR-7625	WAA12R		28.0/1175			11,000 psi	
Rem. 209P	IMR SR-4756	Rem. RP12				30.5/1225	11,100 psi	
Rem. 209P	IMR 800-X	Fed. 12S4			26.0/1200		10,400 psi	
Rem. 209P	IMR 800-X	Rem. RP12			28.5/1250		11,000 psi	
Win. 209	IMR SR-7625	Rem. RP12	25.5/1150				11,000 psi	
Win. 209	IMR SR-7625	WAA12R	26.5/1150				11,000 psi	
Win. 209	IMR SR-4756	Rem. RP12		28.5/1175			11,000 psi	
Win. 209	IMR SR-4756	WAA12R			30.0/1200		10,800 psi	
Win. 209	IMR 800-X	Fed. 12S4	25.0/1175				11,000 psi	
Win. 209	IMR 800-X	Rem. RP12		27.0/1225			11,100 psi	
Win. 209	IMR 800-X	WAA12R			27.0/1250		11,000 psi	
Rem.209P	Blue Dot	Rem.RP12				35.5/1205	8,100 psi	
Win.209	Blue Dot	Rem.RP12				34.5/1205	9,900 psi	
Win.209	HS-7	WAA12R				37.0/1260	10,900 LUP	
Federal: One-Piece Plastic - Hunting								
CCI209M	Blue Dot	Rem.RP12	36.0/1205	36.7/1225	27.4/1240	38.0/1260	10,000 psi	
CCI209M	Herco	Fed.12S4				26.5/1150	10,000 psi	
Fed.209A	Blue Dot	Rem.RP12				36.0/1205	8,800 psi	
Fed.209A	Blue Dot	Rem.RP12				38.0/1205		
Fed.209A	Herco	Fed.12S4				27.0/1150	9,200 psi	
Fed.209A	Herco	Rem.SP12				27.0/1150	8,600 psi	
Fed.209A	Herco	WAA12F114				26.5/1150	8,700 psi	
Fio.616	Herco	Fed.12S4				26.0/1150	10,100 psi	
Rem.209	Blue Dot	Rem.RP12	36.0/1205	36.7/1225	37.4/1240	38.0/1260	8,700 psi	
Rem.209:	Herco	Fed.12S4				26.5/1150	9,900 psi	
Win.209	Blue Dot	Rem.RP12	37.0/1205	37.3/1225	37.6/1240	38.0/1260	9,100 psi	
Win.209	Herco	Fed.12S4				26.5/1150	10,100 psi	
Federal: Plastic (Paper Base Wad)								
CCI209M	Blue Dot	Rem.RP12	35.0/1205	35.7/1225	36.4/1240	37.0/1260	9,500 psi	
Fed.209	SR-4756	WAA12R				30.0/1160	8,500 LUP	
Fed.209	SR-7625	WAA12R				27.0/1150	8,900 LUP	
Fed.209A	Blue Dot	Rem.RP12	33.5/1150	34.0/1180	34.5/1205	36.0/1260	9,500 psi	
Fed.209A	Blue Dot	Rem.SP12				37.0/1260	9,600 psi	
Fed.209A	Herco	Rem.SP12				26.5/1150	8,900 psi	

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Plastic (Paper Base Wad)								
Win.209	Blue Dot	Rem.RP12	34.5/1205	35.3/1225	36.1/1240	37.0/1260	9,900 psi	
Fiocchi: Purple Target (High Base Wad)								
CCI209M	Blue Dot	Rem.RP12				33.0/1205	9,500 psi	
CCI209M	Blue Dot	Rem.RP12				36.5/1260	10,600 psi	
Fed.209	Blue Dot	Rem.RP12				34.5/1205	8,500 psi	
Fio.616	Blue Dot	Rem.RP12	32.5/1150	33.8/1170	35.1/1185	36.5/1205	9,000 psi	
Fio.616	Blue Dot	Rem.RP12				37.5/1260	9,600 psi	
Fio.616	HS-7	WAA12R				39.0/1260	10,800 LUP	
Win.209	Blue Dot	Rem.RP12				35.5/1205	8,600 psi	
Win.209	Blue Dot	Rem.RP12				36.5/1260	10,300 psi	
Remington: Premier & Nitro 27 & STS								
CCI209M	Blue Dot	Rem.RP12	31.0/1150	31.7/1170	32.4/1185	33.0/1205	10,100 psi	
Fed.209	Blue Dot	Rem.RP12	31.0/1150	31.7/1170	32.4/1185	33.0/1205	10,300 psi	
Fed.209	HS-7	Rem.RH12				36.0/1220	10,600 LUP	
Fed. 209A	IMR 800-X	Rem. RP12	22.0/1150				11,200 psi	
Fed. 209A	IMR 800-X	WAA12R	22.5/1150				11,300 psi	
Fio.616	Blue Dot	Rem.RP12	31.0/1150	31.7/1170	32.4/1185	33.0/1205	10,100 psi	
Rem.209P	Blue Dot	Rem.RP12	31.0/1150	31.7/1170	32.4/1185	33.0/1205	10,300 psi	
Rem. 209P	IMR SR-4756	Rem. RP12	27.0/1150				11,200 psi	
Rem. 209P	IMR SR-4756	WAA12R	27.5/1150				11,000 psi	
Rem. 209P	IMR 800-X	Rem. RP12	23.0/1150				11,200 psi	
Rem. 209P	IMR 800-X	WAA12R	23.5/1150				11,200 psi	
Win.209	Blue Dot	Rem.RP12	31.5/1150	32.0/1170	32.5/1185	33.0/1205	10,300 psi	
Win.209	HS-7	WAA12R				35.5/1220	10,300 LUP	
Win. 209	IMR SR-4756	WAA12R	26.5/1150				11,200 psi	
Win. 209	IMR 800-X	Rem. RP12	22.5/1150				11,300 psi	
Win. 209	IMR 800-X	WAA12R	23.0/1150				11,200 psi	
Remington: RXP								
Win.209	W571	Rem.RP12				36.5/1240	10,400 LUP	
Remington: Unibody (Integral Plastic Base Wad)								
CCI209M	Blue Dot	Rem.RP12				32.0/1150	8,400 psi	
CCI209M	IMR800-X	WAA12R				22.0/1130	10,800 LUP	
Fed.209	Blue Dot	Rem.RP12				31.5/1150	9,100 psi	
Fio.616	Blue Dot	Rem.RP12				31.5/1150	9,200 psi	
Rem.209P	Blue Dot	Rem.RP12				32.5/1150	8,000 psi	
Rem.209P	IMR800-X	Rem.RP12				24.0/1120	10,700 LUP	
Win.209	Blue Dot	Rem.RP12				32.0/1150	8,300 psi	
Winchester: Compression-Formed AA Type								
CCI109	W571	Win.WAA12R				35.5/1260	10,500 LUP	
Win.209	Blue Dot	Rem.RP12				31.0/1150	9,400 psi	
Win.209	HS-7	Rem.RP12				36.5/1260	9,900 LUP	
Win.209	HS-7	WAA12R				36.5/1260	10,400 LUP	
Win.209	W540	Rem.RP12				27.5/1095	8,700 LUP	

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type								
Win.209	W540	WAA12R				27.5/1095	8,500 LUP	
Win.209	W571	Rem.RP12				36.5/1260	9,800 LUP	
Win.209	W571	WAA12R				36.5/1260	10,300 LUP	
Winchester: Polyformed (Plastic Base Wad)								
Win.209	W540	WAA12R				33.5/1260	8,900 LUP	

(Photo courtesy Winchester)

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
1 1/8 Ounce Lead Shot								
Ballistic Products: Multi-Hull 12 2A								
CCI 209	IMR 700-X	Pisk-Piston Skeet				18.0/1200	9,800 psi	COS12 overshot
CCI 209	Green Dot	Pisk-Piston Skeet				21.0/1220	9,500 psi	COS12 overshot
CCI 209M	Unique	X12X + 23C12 (2/3" HCW)				25.0/1320	10,800 psi	COS12 overshot
Ch. 209	IMR PB	LB12-2				28.0/1380	9,400 psi	COS12 overshot
M209	IMR 700-X	Pisk-Piston Skeet				18.0/1180	9,200 psi	COS12 overshot
M209	American Select	Pisk-Piston Skeet				18.0/1120	7,900 psi	COS12 overshot
M209	Green Dot	Pisk-Piston Skeet				21.0/1225	9,500 psi	COS12 overshot
M209	Green Dot	Pisk-Piston Skeet				22.5/1266	9,700 psi	COS12 overshot
M209	Red Dot	Pisk-Piston Skeet				18.0/1140	8,900 psi	COS12 overshot
M209	Green Dot	Z21-TC (Trap Commander)				22.0/1265	9,300 psi	COS12 overshot
M209	Red Dot	Z21-TC (Trap Commander)				19.0/1180	8,700 psi	COS12 overshot
W209	Clays	LB12-2				20.0/1280	11,400 psi	COS12 overshot
Win. 209	IMR 700-X	Pisk-Piston Skeet				18.0/1215	9,550 psi	
Win. 209	American Select	Pisk-Piston Skeet				18.0/1200	8,800 psi	
Win. 209	Red Dot	Pisk-Piston Skeet				18.0/1160	9,540 psi	
Win. 209	Red Dot	Pisk-Piston Skeet				19.0/1200	9,600 psi	
Win. 209	Green Dot	Z21-TC (Trap Commander)				22.0/1245	8,900 psi	
Win. 209	Red Dot	Z21-TC (Trap Commander)				19.0/1180	8,800 psi	
Estate: Chedite (Low Base Wad)								
Fed. 209A	Clays	Fed. 12S3	16.0/1090	16.3/1120	16.5/1145	18.5/1200	10,400 psi	
Fed. 209A	Clays	Fiocchi TL1	16.5/1090	16.8/1120	17.0/1145	19.0/1200	10,300 psi	
Fed. 209A	International	Fed. 12S3	19.0/1090	19.4/1145	20.0/1145	21.8/1200	10,700 psi	
Fed. 209A	International	Fiocchi TL1	18.0/1090	18.5/1145	20.0/1200	21.0/1255	10,500 psi	
Fio. 616	Clays	Fiocchi TL1	16.0/1090	16.5/1120	17.0/1145	19.0/1200	11,300 psi	
Fio. 616	International	Fiocchi TL1	19.0/1145	19.8/1175	20.5/1200	22.0/1255	10,000 psi	
Win. 209	Clays	Fed. 12S3	16.5/1090	16.8/1120	17.0/1145	19.0/1200	10,300 psi	
Win. 209	International	Fed. 12S3	19.5/1145	20.3/1175	21.0/1200	22.0/1255	9,900 psi	
Federal: Gold Medal Plastic Target								
CCI 209	American Select	CS12S	20.0/1200	20.2/1215	20.3/1225	20.5/1240	11,400 psi	
CCI 209	American Select	BP HCD24		19.8/1200	19.9/1210	20.0/1220	10,800 psi	#2
CCI 209	American Select	BP HCDP		20.0/1210	20.2/1215	20.5/1225	11,100 psi	#3
CCI 209	American Select	SCAT				21.0/1190	11,200 psi	#6
CCI 209	American Select	SF12 STR-8				20.0/1225	10,700 psi	
CCI 209	American Select	BP S21		19.8/1200	19.9/1210	20.0/1220	10,900 psi	#4
CCI 209	Clays	BP SCAT	19.5/1200	20.0/1220	20.2/1235	20.5/1250	9,500 psi	#6
CCI 209	Clays	H. Versalite	17.3/1090	17.9/1120	18.5/1145	19.7/1200	8,100 LUP	
CCI 209	Clays	BP HCDP	19.5/1200	20.0/1220	20.2/1230	20.5/1250	9,500 psi	#3
CCI 209	Green Dot	Fed. 12S3	19.0/1145	19.6/1160	21.2/1175	22.0/1200	9,200 psi	
CCI 209	IMR 800-X	CB 2118-12	21.5/1095	23.0/1145	24.5/1205	26.0/1265	6,800 psi	
CCI 209	IMR 800-X	Fed. 12S3	21.0/1095	22.5/1155	24.0/1200	26.0/1260	7,300 psi	
CCI 209	IMR 800-X	Rem. Fig.-8	21.0/1105	22.5/1150	24.0/1200	26.0/1260	6,900 psi	
CCI 209	IMR 800-X	WAA12	21.5/1105	22.5/1145	24.0/1200	25.5/1265	7,100 psi	
CCI 209	IMR 800-X	Windjammer	22.5/1100	23.5/1145	25.0/1205	26.0/1250	6,300 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Gold Medal Plastic Target								
CCI 209	International	H. Versalite	20.4/1145	21.5/1175	22.5/1200	24.2/1255	8,700 LUP	
CCI 209	International	BP HCDP	20.5/1145	21.0/1200	12.5/1220	22.0/1250	8,500 psi	#3
CCI 209	Nitro-100	BP SCAT	18.5/1180	19.0/1200	19.5/1220	20.0/1255	9,700 psi	#6
CCI 209	Nitro-100	Fed. 12S3	17.5/1145	18.0/1175	18.5/1200	19.5/1255	9,700 psi	#1
CCI 209	Nitro-100	H. Versalite				20.5/1255		
CCI 209	Nitro-100	BP HCDP	18.5/1180	19.0/1200	19.5/1220	20.0/1255	9,700 psi	
CCI 209	Nitro-100	WAA12	18.0/1145	18.3/1175	18.5/1200	20.0/1255		#3
CCI 209	R. Scot D	Fed. 12S3	19.0/1125	19.5/1145	20.5/1200	22.0/1255	10,500 LUP	
CCI 209	Red Diamond	BP CS12	18.5/1200	19.1/1220	19.7/1240	20.0/1255	9,200 psi	#5
CCI 209	Red Diamond	BP ITD	17.0/1145	17.8/1175	18.5/1200	19.5/1255	8,500 psi	#5
CCI 209	Red Diamond	Claybuster	17.0/1145	17.8/1175	18.5/1200	19.5/1255	8,800 psi	#5
CCI 209	Red Diamond	Fed. 12S0	17.0/1145	17.8/1175	18.5/1200	19.5/1255	8,800 psi	#5
CCI 209	Red Diamond	Fed. 12S3	16.5/1145	17.3/1175	18.0/1200	19.5/1255	9,700 psi	#5
CCI 209	Red Diamond	H. Versalite	17.0/1145	17.5/1175	18.0/1200	19.5/1255	8,900 psi	#5
CCI 209	Red Diamond	Rem. Fig.-8				20.0/1255	8,200 psi	#5
CCI 209	Red Diamond	Rem. TGT12	17.0/1145	17.8/1175	18.5/1200	19.5/1255	8,300 psi	#5
CCI 209	Red Diamond	WAA12				19.5/1255	9,300 psi	#5
CCI 209	Red Dot	Fed. 12S3	18.0/1145	18.6/1160	19.2/1175	20.0/1200	9,800 psi	
CCI 209	Solo 1000	BP SCAT	19.0/1145	20.0/1200	20.5/1220	21.0/1240	9,200 psi	#6
CCI 209	Solo 1000	Fed. 12S3	18.5/1125	19.0/1145	20.0/1200	21.5/1255	10,200 LUP	#1
CCI 209	Solo 1000	BP HCDP		20.5/1220	20.7/1230	21.0/1240	9,200 psi	#3
CCI 209	Solo 1250	BP SCAT	26.5/1220	27.0/1250	27.2/1275	27.5/1300	9,700 psi	#6
CCI 209	Solo 1250	Fed. 12S3	25.5/1200	26.3/1230	27.0/1255	28.5/1310	10,000 LUP	#1
CCI 209	Solo 1250	BP HCDP	26.0/1200	26.5/1220	27.0/1250	27.5/1300	9,700 psi	#3
CCI 209	Unique	Fed. 12S3				24.0/1200	8,300 psi	
CCI 209	Universal	Windjammer	25.2/1200	25.9/1230	26.5/1255	28.0/1310	8,800 psi	
CCI 209	WST	Fed. 12S3	19.5/1145	20.0/1165	20.5/1180	21.0/1200	10,300 psi	
CCI 209M	Green Dot	Fed. 12S3	19.5/1145	20.3/1175	21.0/1200	22.5/1250	9,800 psi	
CCI 209M	International	Rem. TGT12	19.5/1090	20.0/1145	20.6/1200	22.5/1255	8,600 LUP	
CCI 209M	Nitro-100	Fed. 12S3	17.5/1145	18.0/1175	18.5/1200	19.5/1255	10,900 psi	#1
CCI 209M	R. Scot D	Fed. 12S3	18.5/1125	19.0/1145	20.0/1200	21.5/1255	10,900 LUP	
CCI 209M	Red Diamond	BP CS12	17.0/1200	17.8/1215	18.5/1230	20.0/1255	9,500 psi	#5
CCI 209M	Red Diamond	BP ITD	16.5/1145	17.3/1175	18.0/1200	19.5/1255	8,900 psi	#5
CCI 209M	Red Diamond	Claybuster	17.0/1145	17.5/1175	18.0/1200	19.5/1255	9,000 psi	#5
CCI 209M	Red Diamond	Fed. 12S0	17.0/1145	17.5/1175	18.0/1200	19.5/1255	9,000 psi	#5
CCI 209M	Red Diamond	Fed. 12S3	16.5/1145	17.3/1175	18.0/1200	19.5/1255	10,100 psi	#5
CCI 209M	Red Diamond	H. Versalite	16.5/1145	17.3/1175	18.0/1200	19.5/1255	9,000 psi	#5
CCI 209M	Red Diamond	Rem. Fig.-8				20.0/1255	9,200 psi	#5
CCI 209M	Red Diamond	Rem. TGT12	17.0/1145	17.5/1175	18.0/1200	19.5/1255	8,900 psi	#5
CCI 209M	Red Diamond	WAA12				19.5/1255	9,500 psi	#5
CCI 209M	Red Dot	Fed. 12S3	17.0/1090	18.0/1145	18.6/1175	19.0/1200	8,900 psi	
CCI 209M	Solo 1000	Fed. 12S3	18.0/1125	18.5/1145	19.5/1200	21.0/1255	10,700 LUP	#1
CCI 209M	Solo 1250	Fed. 12S3	24.5/1200	25.3/1230	26.0/1255	27.0/1310	10,400 LUP	#1
CCI 209M	Unique	Fed. 12S3	23.5/1200	23.7/1225	23.8/1235	24.0/1250	9,100 psi	
CCI 209M	Universal	H. Versalite	23.0/1200	23.6/1230	24.2/1255	25.3/1310	10,300 psi	
CCI 209SC	American Select	Fed. 12S3	18.5/1145	19.1/1160	19.7/1175	20.5/1200	10,000 psi	
CCI 209SC	Clays	H. Versalite	16.0/1090	16.5/1120	17.0/1145	18.2/1200	10,400 psi	
CCI 209SC	Green Dot	Fed. 12S3	20.5/1145	21.1/1160	21.7/1175	22.5/1200	8,900 psi	
CCI 209SC	Green Dot	Rem. Fig.-8	21.0/1145	21.6/1160	22.2/1175	23.0/1200	9,200 psi	
CCI 209SC	Green Dot	WAA12	20.5/1145	20.9/1160	21.3/1175	22.0/1200	10,200 psi	
CCI 209SC	International	H. Versalite	19.0/1145	19.8/1175	20.5/1200	21.5/1255	10,300 psi	
CCI 209SC	International	Rem. TGT12	19.0/1090	19.2/1145	20.0/1200	21.5/1255	9,500 psi	
CCI 209SC	Red Dot	Fed. 12S3	19.0/1145	19.4/1160	19.9/1175	20.5/1200	10,700 psi	
CCI 209SC	Red Dot	Rem. Fig.-8	19.5/1145	19.9/1160	20.3/1175	21.0/1200	9,800 psi	
CCI 209SC	Red Dot	WAA12	18.5/1145	18.9/1160	19.3/1175	20.0/1200	10,500 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Gold Medal Plastic Target								
CCI 209SC	Universal	H. Versalite	23.2/1200	23.9/1230	24.5/1255	25.5/1300	9,600 psi	
CCI 209SC	Universal	Windjammer	24.5/1200	25.3/1230	26.0/1310	26.7/1310	8,900 psi	
Fed. 209	#2 Improved	Fed. 12S0				18.5/1125	8,100 psi	#1
Fed. 209	#2 Improved	Fed. 12S3				19.0/1145	8,700 psi	#1
Fed. 209	Clays	Fed. 12S3	17.7/1090	18.2/1120	18.7/1145	19.8/1200	8,100 LUP	
Fed. 209	Clays	Rem. Fig.-8	17.6/1090	18.2/1120	18.7/1145	19.8/1200	7,800 LUP	
Fed. 209	Clays	WAA12	17.2/1090	17.9/1120	18.5/1145	19.8/1200	8,000 LUP	
Fed. 209	International	Fed. 12S3	21.3/1145	21.9/1175	22.5/1200	23.7/1255	8,100 LUP	
Fed. 209	International	Pat. Ctrl. Red	20.5/1090	21.5/1145	22.9/1200	24.2/1255	8,100 LUP	
Fed. 209	International	Windjammer	22.0/1090	22.3/1145	23.1/1200	24.4/1255		
Fed. 209	Nitro-100	Fed. 12S0	18.0/1145	18.5/1175	19.0/1200	20.5/1255		
Fed. 209	Nitro-100	H. Versalite				18.0/1145		
Fed. 209	Nitro-100	WAA12	17.5/1145	18.0/1175	18.5/1200	20.0/1255		
Fed. 209	R. Scot D	Claybuster	19.0/1125	19.5/1145	20.5/1200	22.0/1255	9,500 LUP	
Fed. 209	R. Scot D	Fed. 12C1	19.0/1125	19.5/1145	20.5/1200	22.5/1255	10,300 LUP	
Fed. 209	R. Scot D	Fed. 12S0	18.0*/1125	19.0/1145	20.1/1175	20.5/1200	10,400 LUP	#7
Fed. 209	R. Scot D	Fed. 12S3	18.5/1125	19.5/1145	20.5/1200	22.0/1255	10,900 LUP	
Fed. 209	R. Scot D	H. Versalite	19.0/1125	19.5/1145	20.5/1200	22.0/1255	10,900 LUP	
Fed. 209	R. Scot D	Lage Uniwad	19.0/1125	19.5/1145	21.0/1200	22.5/1255	9,900 LUP	
Fed. 209	R. Scot D	Pat. Ctrl. Red	19.0/1125	19.5/1145	20.5/1200	22.0/1255	10,700 LUP	
Fed. 209	R. Scot D	Rem. Fig.-8	19.0/1125	19.5/1145	20.5/1200	22.5/1255	10,900 LUP	
Fed. 209	R. Scot D	WAA12	19.0/1125	19.5/1145	20.5/1200	22.0/1255	10,000 LUP	
Fed. 209	R. Scot D	Windjammer	19.0/1125	19.5/1145	21.0/1200	22.5/1255	9,500 LUP	
Fed. 209	Scot 453	Fed. 12S3	18.5/1125	19.0/1145	19.8/1175	20.5/1200	9,800 psi	
Fed. 209	Solo 1000	Claybuster	18.5/1125	19.0/1145	20.0/1200	21.5/1255		
Fed. 209	Solo 1000	Fed. 12C1				18.5/1125	7,100 LUP	#1
Fed. 209	Solo 1000	Fed. 12S0				17.5*/1125	6,900 LUP	#1, #7
Fed. 209	Solo 1000	Fed. 12S3	18.0/1125	18.2/1135	18.3/1140	18.5/1145	8,000 LUP	#1
Fed. 209	Solo 1000	H. Versalite				18.5/1125	7,600 LUP	#1
Fed. 209	Solo 1000	Lage Uniwad				18.5/1125	7,100 LUP	#1
Fed. 209	Solo 1000	Pat. Ctrl. Red				18.5/1125	7,600 LUP	#1
Fed. 209	Solo 1000	WAA12				18.5/1125	7,200 LUP	#1
Fed. 209	Solo 1000	Windjammer	18.5/1125			22.0/1255	8,700 LUP	#1
Fed. 209	Solo 1250	Claybuster	28.5/1255	28.8/1275	29.2/1290	29.5/1310	9,100 LUP	#1
Fed. 209	Solo 1250	Fed. 12C1				29.0/1310	10,300 LUP	#1
Fed. 209	Solo 1250	Fed. 12S3				28.5/1310	10,700 LUP	#1
Fed. 209	Solo 1250	H. Versalite				29.0/1310	10,200 LUP	#1
Fed. 209	Solo 1250	Rem. RXP12	26.5/1200	27.3/1235	28.3/1275	29.0/1310	10,100 LUP	#1
Fed. 209	Solo 1250	WAA12				28.5/1310	10,200 LUP	#1
Fed. 209	Solo 1250	Windjammer	28.0/1255	28.3/1275	28.7/1290	29.0/1310	9,900 LUP	#1
Fed. 209	Universal	Fed. 12S3	23.5/1200	24.2/1230	24.8/1255	26.0/1310	9,500 psi	
Fed. 209	WST	Fed. 12S3	20.0/1145	20.5/1165	21.0/1180	21.5/1200	9,000 psi	
Fed. 209A	#2 Improved	Fed. 12S3				20.5/1200	9,800 psi	#1
Fed. 209A	American Select	Claybuster	17.5/1090	19.0/1145	20.5/1200	22.0/1250	10,600 psi	
Fed. 209A	American Select	Fed. 12S3	17.5/1090	19.0/1145	20.5/1200	22.0/1250	10,100 psi	
Fed. 209A	American Select	H. Versalite	17.0*/1090	18.5*/1145	20.0*/1200	21.0/1250	10,900 psi	*#8
Fed. 209A	American Select	Rem. Fig.-8	17.5/1090	19.0/1145	19.6/1175	20.0/1200	10,300 psi	#8
Fed. 209A	American Select	WAA12	17.5/1090	19.0/1145	19.8/1175	20.5/1200	9,400 psi	#8
Fed. 209A	American Select	Windjammer	19.0/1145	19.8/1175	20.5/1200	21.5/1250	10,700 psi	#8
Fed. 209A	American Select	WT12 Orange	18.0/1090	19.0/1145	19.8/1175	20.5/1200	10,400 psi	#8
Fed. 209A	American Select	BP Zero	18.3/1150	18.5/1170	18.8/1200	19.8/1245	10,800 psi	
Fed. 209A	Clays	Fed. 12S3	16.8/1090	17.6/1160	18.1/1175	19.0/1200	10,400 psi	
Fed. 209A	Clays	Rem. Fig.-8	17.0/1090	17.3/1120	17.5/1145	19.0/1200	9,600 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Gold Medal Plastic Target								
Fed. 209A	Clays	WAA12	16.5/1090	16.8/1120	17.5/1145	18.5/1200	10,300 psi	
Fed. 209A	Clays	Winjam. II	16.2/1090	16.9/1120	17.5/1145	18.5/1200	9,900 psi	
Fed. 209A	Green Dot	BP SCAT	18.0/1090	19.0/1145	20.0/1200	21.5/1250	9,500 psi	#6
Fed. 209A	Green Dot	Fed. 12S3	18.5/1090	19.5/1145	20.0/1200	21.5/1250	9,500 psi	
Fed. 209A	Green Dot	Fiocchi FTW1	18.0*/1090	19.5/1145	20.1/1175	20.5/1200	9,300 psi	*#8
Fed. 209A	Green Dot	H. Versalite	18.0/1090	19.0/1145	20.5/1200	21.5/1250	9,000 psi	
Fed. 209A	Green Dot	BP HCDP	19.0/1145	19.5/1175	20.0/1200	21.5/1250	9,500 psi	#3
Fed. 209A	Green Dot	Rem. Fig.-8	18.0/1090	19.0/1145	20.0/1200	22.0/1250	9,200 psi	
Fed. 209A	Green Dot	Rem. RXP12	19.0/1145	20.0/1200	21.5/1250	24.0/1310	10,400 psi	
Fed. 209A	Green Dot	WAA12	18.0*/1090	20.0/1200	21.9/1265	23.0/1310	10,400 psi	*#8
Fed. 209A	Green Dot	WAA12SL	18.0/1090	19.0/1145	19.6/1175	20.0/1200	8,800 psi	
Fed. 209A	Green Dot	Windjammer	18.5/1090	21.0/1200	22.9/1275	24.0/1310	8,800 psi	
Fed. 209A	Green Dot	WT12 Orange	20.0/1145	20.4/1160	20.9/1175	21.5/1200	8,800 psi	#8
Fed. 209A	Herco	Fed. 12S3				26.0/1250	8,000 psi	
Fed. 209A	Herco	H. Versalite				26.0/1250	8,200 psi	
Fed. 209A	Herco	Rem. Fig.-8				26.0/1250	7,700 psi	
Fed. 209A	Herco	Rem. RXP12				26.0/1250	8,000 psi	
Fed. 209A	Herco	WAA12				26.0/1250	8,300 psi	
Fed. 209A	Herco	Windjammer				26.0/1250	7,400 psi	
Fed. 209A	IMR 700-X	BP SCAT	17.0/1150	17.5/1175	17.9/1185	18.5/1200	9,500 psi	#6
Fed. 209A	IMR 700-X	CB 2118-12	16.0/1110	17.0/1155	18.0/1195	19.5/1260	10,800 psi	
Fed. 209A	IMR 700-X	Fed. 12S3	16.0/1105	17.0/1145	18.5/1205	20.0/1260	10,400 psi	
Fed. 209A	IMR 700-X	BP HCDP	18.5/1200	19.0/1225	19.2/1235	19.5/1250	10,000 psi	#3
Fed. 209A	IMR 700-X	Rem. TGT12	16.0/1100	17.0/1145	18.0/1190	19.5/1250	10,500 psi	
Fed. 209A	IMR 700-X	WAA12SL	16.0/1110	17.0/1150	18.0/1190	19.5/1250	10,600 psi	
Fed. 209A	IMR 800-X	BP SCAT	20.5/1100	21.3/1150	23.0/1200	25.0/1260	7,700 psi	#6
Fed. 209A	IMR 800-X	CB 2118-12	20.5/1090	22.5/1150	23.0/1195	24.5/1250	7,400 psi	
Fed. 209A	IMR 800-X	Fed. 12S3	20.5/1090	22.0/1155	23.0/1195	25.0/1265	7,700 psi	
Fed. 209A	IMR 800-X	BP HCDP				25.0/1260	7,700 psi	#3
Fed. 209A	IMR 800-X	Rem. Fig.-8	21.0/1100	22.5/1155	24.0/1205	25.5/1255	7,100 psi	
Fed. 209A	IMR 800-X	WAA12	20.5/1100	21.5/1140	23.0/1195	24.5/1255	7,700 psi	
Fed. 209A	IMR 800-X	Windjammer	22.0/1100	23.0/1145	24.0/1190	25.5/1260	6,700 psi	
Fed. 209A	IMR PB	BP SCAT	19.5/1100	21.0/1150	22.5/1200	24.0/1255	8,700 psi	#6
Fed. 209A	IMR PB	CB 2118-12	20.0/1105	21.0/1140	22.5/1195	24.0/1250	8,000 psi	
Fed. 209A	IMR PB	Fed. 12S3	19.5/1095	21.0/1140	22.5/1190	24.0/1255	8,700 psi	
Fed. 209A	IMR PB	BP HCDP				24.0/1255	8,700 psi	#3
Fed. 209A	IMR PB	Rem. Fig.-8	20.0/1095	21.5/1145	23.0/1200	24.5/1255	8,000 psi	
Fed. 209A	IMR PB	WAA12	19.5/1095	21.0/1150	22.5/1205	24.0/1260	8,800 psi	
Fed. 209A	IMR PB	Windjammer	20.5/1105	21.5/1145	23.0/1205	24.0/1250	7,800 psi	
Fed. 209A	International	Fed. 12S3	18.5/1090	19.0/1145	20.5/1200	22.2/1255	10,600 psi	
Fed. 209A	International	Pat. Ctrl. Red	19.0/1090	19.7/1145	21.0/1200	22.3/1255	9,600 psi	
Fed. 209A	International	Windjam. II	19.0/1145	19.2/1160	19.5/1175	20.0/1200	8,500 psi	
Fed. 209A	International	Windjammer	19.0/1090	19.5/1145	20.8/1200	22.5/1255	9,200 psi	
Fed. 209A	Nitro-100	BP ITD	16.5/1145	17.0/1175	17.5/1200	19.0/1255	10,200 psi	#1
Fed. 209A	Nitro-100	Claybuster	16.0/1125	16.5/1145	17.5/1200	18.5/1255	10,100 psi	#1
Fed. 209A	Nitro-100	Fed. 12C1	17.0/1145	17.3/1175	17.5/1200	18.5/1255	10,000 psi	#1
Fed. 209A	Nitro-100	Fed. 12S0	16.5/1145	16.7/1160	17.0/1175	17.5/1200	9,500 psi	#1
Fed. 209A	Nitro-100	Fed. 12S3	17.5/1200	17.7/1215	18.0/1230	18.5/1255		#1
Fed. 209A	Nitro-100	H. Versalite	16.0/1145	16.5/1175	17.0/1200	20.5/1255	8,900 psi	#1
Fed. 209A	Nitro-100	Pat. Ctrl. Red	16.5/1145	17.3/1175	18.0/1200	19.0/1255	9,400 psi	#1
Fed. 209A	Nitro-100	Rem. Fig.-8	16.5/1145	17.0/1145	17.5/1200	19.0/1255	9,600 psi	#1
Fed. 209A	Nitro-100	WAA12	16.0/1145	17.0/1175	18.0/1200	18.5/1255	9,700 psi	#1
Fed. 209A	Red Diamond	BP CS12	18.0/1200	18.5/1215	19.0/1230	20.0/1255	9,900 psi	#5
Fed. 209A	Red Diamond	BP ITD	16.5/1145	17.3/1175	18.0/1200	19.5/1255	9,600 psi	#5

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Gold Medal Plastic Target								
Fed. 209A	Red Diamond	Claybuster	16.5/1145	17.3/1175	18.0/1200	19.5/1255	9,400 psi	#5
Fed. 209A	Red Diamond	Fed. 12S0	16.5/1145	17.3/1175	18.0/1200	19.5/1255	9,400 psi	#5
Fed. 209A	Red Diamond	Fed. 12S3	16.5/1145	17.3/1175	18.0/1200	19.5/1255	10,900 psi	#5
Fed. 209A	Red Diamond	H. Versalite	16.5/1145	17.3/1175	18.0/1200	19.5/1255	9,800 psi	#5
Fed. 209A	Red Diamond	Rem. Fig.-8				20.0/1255	9,400 psi	#5
Fed. 209A	Red Diamond	Rem. TGT12	16.5/1145	17.3/1175	18.0/1200	19.5/1255	9,600 psi	#5
Fed. 209A	Red Diamond	WAA12				19.5/1255	9,900 psi	#5
Fed. 209A	Red Dot	BP SCAT	17.0/1090	18.0/1145	18.6/1175	19.0/1200	10,000 psi	#6
Fed. 209A	Red Dot	Fed. 12S3	17.0/1090	18.0/1145	18.9/1175	19.5/1200	10,000 psi	
Fed. 209A	Red Dot	Fiocchi FTW1	16.5*/1090	18.0*/1145	18.6/1175	19.0/1200	10,500 psi	#8
Fed. 209A	Red Dot	H. Versalite	17.0*/1090	18.0*/1145	19.0/1200	20.0/1250	10,700 psi	#8
Fed. 209A	Red Dot	Rem. Fig.-8	17.0/1090	18.0/1145	19.0/1200	20.0/1250	9,500 psi	
Fed. 209A	Red Dot	Rem. RXP12	18.0/1145	18.6/1175	19.0/1200	20.0/1250	10,100 psi	
Fed. 209A	Red Dot	WAA12	16.5/1090	17.5/1145	18.4/1175	19.0/1200	10,400 psi	#8
Fed. 209A	Red Dot	WAA12SL	17.0/1090	18.0/1145	18.6/1175	19.0/1200	10,000 psi	
Fed. 209A	Red Dot	Windjammer	17.5/1090	18.5/1145	19.5/1200	20.5/1250	9,500 psi	
Fed. 209A	Red Dot	WT12 Orange	18.5/1145	18.9/1160	19.4/1175	20.0/1200	10,400 psi	#8
Fed. 209A	Solo 1000	BP ITD	18.0/1145	18.8/1175	19.5/1200	20.5/1255	9,700 LUP	#1
Fed. 209A	Solo 1000	Claybuster	17.0/1125	17.5/1145	19.0/1200	20.0/1255	10,700 psi	#1
Fed. 209A	Solo 1000	Fed. 12C1	18.0/1145	18.8/1175	19.5/1200	20.5/1255	10,500 LUP	#1
Fed. 209A	Solo 1000	Fed. 12S0	18.0/1145	18.2/1160	18.5/1175	19.0/1200	9,200 LUP	#1
Fed. 209A	Solo 1000	Fed. 12S3	19.5/1200	19.7/1215	20.0/1230	20.5/1255	10,200 psi	#1
Fed. 209A	Solo 1000	H. Versalite	18.0/1145	18.5/1175	19.0/1200	20.0/1255	10,200 LUP	#1
Fed. 209A	Solo 1000	Pat. Ctrl. Red	18.5/1145	19.0/1175	19.5/1200	20.5/1255	9,600 LUP	#1
Fed. 209A	Solo 1000	Rem. Fig.-8	17.0/1125	17.5/1145	19.0/1200	20.0/1255	10,300 psi	#1
Fed. 209A	Solo 1000	WAA12	18.0/1145	18.5/1175	19.0/1200	20.0/1255	10,500 LUP	#1
Fed. 209A	Solo 1250	Claybuster				27.0/1200	8,100 LUP	#1
Fed. 209A	Solo 1250	Fed. 12C1	26.0/1200	26.4/1215	26.8/1230	27.5/1255	9,100 LUP	#1
Fed. 209A	Solo 1250	Fed. 12S3	25.5/1200	25.9/1215	26.3/1230	27.0/1255	9,600 LUP	#1
Fed. 209A	Solo 1250	H. Versalite				26.0/1200	9,000 LUP	#1
Fed. 209A	SR-7625	BP SCAT	23.5/1150	24.0/1170	24.2/1180	24.5/1190	6,900 psi	#6
Fed. 209A	SR-7625	CB 2118-12	22.0/1095	23.5/1150	24.5/1195	26.0/1250	7,700 psi	
Fed. 209A	SR-7625	Fed. 12S3	22.0/1090	23.5/1150	24.5/1190	26.5/1260	7,700 psi	
Fed. 209A	SR-7625	BP HCDP				26.5/1265	7,700 psi	#3
Fed. 209A	SR-7625	Rem. Fig.-8	22.5/1090	24.0/1140	25.5/1205	26.5/1245	7,100 psi	
Fed. 209A	SR-7625	WAA12	21.5/1100	23.0/1155	24.5/1200	26.0/1265	8,200 psi	
Fed. 209A	SR-7625	Windjammer	23.0/1105	24.0/1140	25.5/1200	27.0/1265	7,400 psi	
Fed. 209A	Unique	Fed. 12S3	22.5/1200	23.1/1225	23.3/1235	23.5/1250	8,100 psi	
Fed. 209A	Unique	Fiocchi FTW1				22.5/1200	8,100 psi	
Fed. 209A	Unique	H. Versalite	22.0/1200	24.0/1250	24.0/1280	25.0/1310	10,000 psi	
Fed. 209A	Unique	BP HCDP				25.0/1310	9,700 psi	#3
Fed. 209A	Unique	Rem. Fig.-8	22.5/1200	23.1/1225	23.3/1235	23.5/1250	7,800 psi	
Fed. 209A	Unique	Rem. RXP12	22.5/1200	23.5/1250	24.8/1280	26.0/1310	10,300 psi	
Fed. 209A	Unique	WAA12	22.5/1200	23.0/1250	24.0/1280	25.0/1310	9,200 psi	
Fed. 209A	Unique	Windjammer	22.5/1200	24.0/1250	24.0/1280	25.0/1310	9,700 psi	
Fed. 209A	Unique	WT12 Orange				23.5/1200	8,300 psi	#8
Fed. 209A	Universal	Fed. 12S3	23.0/1200	23.7/1230	24.4/1255	25.7/1310	10,500 psi	
Fed. 209A	Alliant e3	Claybuster 3118-12AR				15.5/1090	8,210 psi	
Fed. 209A	Alliant e3	Claybuster 4118				15.5/1090	7,860 psi	
Fed. 209A	Alliant e3	Rem. Fig. 8				15.5/1090	7,930 psi	
Fed. 209A	Alliant e3	WAA12 (white)				15.5/1090	8,290 psi	
Fed. 209A	Alliant e3	WAA12SL				15.5/1090	8,485 psi	
Fed. 209A	Alliant e3	Fed. 12S3				15.5/1090	8,580 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Gold Medal Plastic Target								
Fed. 209A	Alliant e3	Duster - Blue				15.5/1090	8,655 psi	
Fed. 209A	Alliant e3	Claybuster 4118				16.5/1145	8,365 psi	
Fed. 209A	Alliant e3	Claybuster 3118-12AR				16.5/1145	8,960 psi	
Fed. 209A	Alliant e3	WAA12 (white)				16.5/1145	8,980 psi	
Fed. 209A	Alliant e3	WAA12SL				16.5/1145	9,215 psi	
Fed. 209A	Alliant e3	Duster - Blue				16.5/1145	9,520 psi	
Fed. 209A	Alliant e3	Rem. Fig. 8				17.0/1145	8,875 psi	
Fed. 209A	Alliant e3	Fed. 12S3				17.0/1145	9,260 psi	
Fed. 209A	Alliant e3	Claybuster 3118-12AR				17.8/1200	9,990 psi	
Fed. 209A	Alliant e3	Claybuster 4118				18.0/1200	9,525 psi	
Fed. 209A	Alliant e3	Rem. Fig. 8				18.0/1200	9,900 psi	
Fed. 209A	Alliant e3	WAA12 (white)				18.0/1200	10,470 psi	
Fed. 209A	Alliant e3	Duster - Blue				18.0/1200	10,550 psi	
Fed. 209A	Alliant e3	Fed. 12S3				18.0/1200	10,660 psi	
Fed. 209A	Alliant e3	WAA12SL				18.0/1200	10,755 psi	
Fed. 209A	Promo	Fed. 12S3				18.0/1145		
Fed. 209A	Promo	WAA12 (white)				17.5/1145		
Fed. 209A	Promo	Claybuster 3118-12AR				18.0/1145		
Fed. 209A	Promo	Fed. 12S3				19.5/1200		
Fed. 209A	Promo	WAA12 (white)				19.0/1200		
Fed. 209A	Promo	Claybuster 3118-12AR				19.0/1200		
Fio. 616	Clays	Fiocchi TL1	16.5/1090	17.2/1120	17.9/1145	19.3/1200	9,400 LUP	
Fio. 616	International	Fiocchi TL1	19.2/1090	19.7/1145	21.1/1200	22.5/1255	9,200 LUP	
Fio. 616	Nitro-100	Fed. 12S3	17.5/1145	18.0/1175	18.5/1200	19.5/1255	10,200 psi	#1
Fio. 616	R. Scot D	Fed. 12S3	18.5/1125	19.0/1145	20.5/1200	22.0/1255	10,200 LUP	
Fio. 616	Red Diamond	BP CS12	18.0/1200	18.5/1215	19.0/1230	20.0/1255	9,600 psi	#5
Fio. 616	Red Diamond	BP ITD	16.5/1145	17.3/1175	18.0/1200	19.5/1255	9,200 psi	#5
Fio. 616	Red Diamond	Claybuster	16.5/1145	17.3/1175	18.0/1200	19.5/1255	9,100 psi	#5
Fio. 616	Red Diamond	Fed. 12S0	16.5/1145	17.3/1175	18.0/1200	19.5/1255	9,100 psi	#5
Fio. 616	Red Diamond	Fed. 12S3	16.5/1145	17.3/1175	18.0/1200	19.5/1255	10,800 psi	#5
Fio. 616	Red Diamond	H. Versalite	16.5/1145	17.3/1175	18.0/1200	19.5/1255	9,700 psi	#5
Fio. 616	Red Diamond	Rem. Fig.-8				20.0/1255	9,300 psi	#5
Fio. 616	Red Diamond	Rem. TGT12	16.5/1145	17.3/1175	18.0/1200	19.5/1255	8,900 psi	#5
Fio. 616	Red Diamond	WAA12				19.5/1255	10,000 psi	
Fio. 616	Red Dot	Fed. 12S3				17.5/1090	8,200 psi	#1
Fio. 616	Solo 1000	Fed. 12S3	18.0/1125	18.5/1145	20.0/1200	21.5/1255	9,500 LUP	
Fio. 616	Universal	Fiocchi TL1	23.3/1200	23.8/1230	24.2/1255	26.0/1310	10,100 psi	
Rem. 209	Nitro-100	Fed. 12S0	18.0/1145	18.5/1175	19.0/1200	20.5/1255		
Rem. 209	Nitro-100	H. Versalite				20.5/1255		
Rem. 209	Nitro-100	WAA12	18.0/1145	18.3/1175	18.5/1200	20.0/1255		
Rem. 209	Red Diamond	BP CS12	18.5/1200	18.9/1215	19.3/1230	20.0/1255	9,300 psi	#5
Rem. 209	Red Diamond	BP ITD	17.0/1145	17.8/1175	18.5/1200	19.5/1255	9,000 psi	#5
Rem. 209	Red Diamond	Claybuster	17.5/1145	18.0/1175	18.5/1200	19.5/1255	8,300 psi	#5
Rem. 209	Red Diamond	Fed. 12S0	17.5/1145	18.0/1175	18.5/1200	19.5/1255	8,300 psi	#5
Rem. 209	Red Diamond	Fed. 12S3	16.5/1145	17.3/1175	18.0/1200	19.5/1255	9,500 psi	#5
Rem. 209	Red Diamond	H. Versalite	17.0/1145	17.5/1175	18.0/1200	19.5/1255	8,800 psi	#5
Rem. 209	Red Diamond	Rem. Fig.-8				20.0/1255	7,700 psi	#5
Rem. 209	Red Diamond	Rem. TGT12	17.5/1145	18.0/1175	18.5/1200	19.5/1255	8,300 psi	#5
Rem. 209	Red Diamond	WAA12				19.5/1255	9,000 psi	#5
Rem. 209P	American Select	Fed. 12S3	19.5/1145	20.1/1160	20.7/1175	21.5/1200	9,000 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Gold Medal Plastic Target								
Rem. 209P	Clays	Pat. Ctrl. Red	17.5/1090	18.0/1120	18.5/1145	19.4/1200	8,300 LUP	
Rem. 209P	Green Dot	Fed. 12S3	20.5/1145	21.0/1160	21.5/1200	23.0/1250	8,800 psi	
Rem. 209P	IMR 700-X	CB 2118-12	16.0/1095	17.0/1140	18.5/1195	20.0/1250	9,600 psi	
Rem. 209P	IMR 700-X	Fed. 12S3	16.0/1095	17.5/1155	18.5/1190	20.0/1250	9,800 psi	
Rem. 209P	IMR 700-X	Rem. TGT12	16.0/1095	17.5/1150	18.5/1190	20.0/1250	9,500 psi	
Rem. 209P	IMR 700-X	WAA12SL	16.5/1110	17.5/1155	18.5/1195	20.0/1255	9,500 psi	
Rem. 209P	IMR PB	CB 2118-12	21.0/1105	22.5/1150	23.5/1200	25.0/1265	8,000 psi	
Rem. 209P	IMR PB	Fed. 12S3	20.5/1100	22.0/1155	23.0/1190	25.0/1265	8,400 psi	
Rem. 209P	IMR PB	Rem. Fig.-8	21.0/1100	22.5/1155	23.5/1190	25.0/1245	7,500 psi	
Rem. 209P	IMR PB	WAA12SL	20.5/1095	21.5/1140	23.0/1195	25.0/1260	8,000 psi	
Rem. 209P	IMR PB	Windjammer	21.0/1095	22.5/1155	24.0/1205	25.5/1250	6,900 psi	
Rem. 209P	Nitro-100	Fed. 12S3	17.5/1145	18.0/1175	18.5/1200	19.0/1255	10,000 psi	#1
Rem. 209P	R. Scot D	Fed. 12S3	19.0/1125	19.5/1145	20.5/1200	22.0/1255	10,100 LUP	
Rem. 209P	Red Dot	Fed. 12S3	18.5/1145	18.8/1160	19.1/1175	19.5/1200	9,300 psi	
Rem. 209P	Solo 1000	Fed. 12S3	18.5/1125	19.0/1145	20.0/1200	21.5/1255	9,600 LUP	#1
Rem. 209P	Solo 1250	Fed. 12S3	25.5/1200	26.3/1230	27.0/1255	28.5/1310	10,300 LUP	#1
Rem. 209P	SR-7625	CB 2118-12	22.5/1105	24.5/1150	26.0/1205	27.0/1250	7,300 psi	
Rem. 209P	SR-7625	Fed. 12S3	23.0/1095	24.5/1155	25.5/1195	27.0/1255	7,400 psi	
Rem. 209P	SR-7625	Rem. Fig.-8	24.0/1100	25.5/1155	27.0/1205	28.5/1260	6,300 psi	
Rem. 209P	SR-7625	WAA12	22.0/1100	23.5/1145	25.5/1205	27.5/1255	7,200 psi	
Rem. 209P	SR-7625	Windjammer	24.0/1095	25.5/1140	27.0/1200	28.5/1265	6,100 psi	
Rem. 209P	Unique	Fed. 12S3	24.0/1200	24.5/1225	24.7/1235	25.0/1250	7,600 psi	
Win. 209	American Select	Fed. 12S3	19.5/1145	19.8/1160	20.1/1175	20.5/1200	9,900 psi	
Win. 209	Clays	Windjammer	17.3/1090	17.8/1120	18.3/1145	19.4/1200	8,100 LUP	
Win. 209	Green Dot	Fed. 12S3	19.5/1145	20.0/1160	20.5/1200	22.5/1250	10,500 LUP	
Win. 209	IMR 700-X	CB 2118-12	16.0/1100	17.0/1145	18.5/1205	19.5/1245	10,000 psi	
Win. 209	IMR 700-X	Fed. 12S3	16.0/1105	17.0/1150	18.0/1190	19.5/1255	10,700 psi	
Win. 209	IMR 700-X	Rem. TGT12	16.0/1095	17.0/1140	18.5/1195	20.0/1255	9,600 psi	
Win. 209	IMR 700-X	WAA12SL	16.0/1100	17.0/1145	18.5/1205	19.5/1245	9,900 psi	
Win. 209	IMR 800-X	BP SCAT	24.0/1205	24.5/1225	24.7/1235	25.0/1245	6,800 LUP	#6
Win. 209	IMR 800-X	CB 2118-12	20.5/1095	22.0/1145	23.5/1200	25.0/1260	7,400 psi	
Win. 209	IMR 800-X	Fed. 12S3	20.5/1095	22.0/1155	23.0/1195	24.5/1250	7,500 psi	
Win. 209	IMR 800-X	BP HCDP	24.0/1205	24.5/1220	25.0/1245	25.5/1280	7,400 LUP	#3
Win. 209	IMR 800-X	Rem. Fig.-8	21.0/1100	22.0/1140	23.5/1200	25.0/1255	7,100 psi	
Win. 209	IMR 800-X	WAA12	20.5/1100	21.5/1140	23.0/1195	25.0/1265	7,700 psi	
Win. 209	IMR 800-X	Windjammer	22.0/1105	23.0/1150	24.0/1190	25.5/1255	6,700 psi	
Win. 209	IMR PB	CB 2118-12	20.5/1100	22.0/1150	23.5/1200	25.0/1245	7,600 psi	
Win. 209	IMR PB	Fed. 12S3	20.5/1090	22.0/1150	23.0/1190	24.5/1250	8,400 psi	
Win. 209	IMR PB	Rem. Fig.-8	21.0/1105	22.0/1140	23.5/1200	25.0/1255	7,800 psi	
Win. 209	IMR PB	WAA12SL	21.0/1100	22.0/1140	23.5/1200	25.0/1255	8,200 psi	
Win. 209	IMR PB	Windjammer	21.0/1105	22.0/1145	23.5/1205	24.5/1250	7,700 psi	
Win. 209	International	BP HCDP				22.4/1255	8,800 LUP	#3
Win. 209	International	WAA12SL	19.1/1090	20.1/1145	21.0/1200	22.4/1255	8,900 LUP	
Win. 209	Nitro-100	Fed. 12S3	17.5/1145	18.0/1175	18.5/1200	19.5/1255	10,200 psi	#1
Win. 209	Nitro-100	H. Versalite	17.5/1145	17.7/1165	17.8/1175	18.0/1200		
Win. 209	Nitro-100	WAA12	18.0/1145	18.3/1175	18.5/1200	20.0/1255		
Win. 209	R. Scot D	Fed. 12S3	19.0/1125	19.5/1145	20.5/1200	22.0/1255	10,200 LUP	
Win. 209	Red Diamond	BP CS12	18.0/1200	18.5/1215	19.0/1230	20.0/1255	9,600 psi	#5
Win. 209	Red Diamond	BP ITD	16.5/1145	17.3/1175	18.0/1200	19.5/1255	9,100 psi	#5
Win. 209	Red Diamond	Claybuster	16.5/1145	17.3/1175	18.0/1200	19.5/1255	9,200 psi	#5
Win. 209	Red Diamond	Fed. 12S0	16.5/1145	17.3/1175	18.0/1200	19.5/1255	9,200 psi	#5
Win. 209	Red Diamond	Fed. 12S3	16.5/1145	17.3/1175	18.0/1200	19.5/1255	10,400 psi	#5
Win. 209	Red Diamond	H. Versalite	16.5/1145	17.3/1175	18.0/1200	19.5/1255	9,400 psi	#5
Win. 209	Red Diamond	Rem. Fig.-8				20.0/1255	9,100 psi	#5
Win. 209	Red Diamond	Rem. TGT12	16.5/1145	17.3/1175	18.0/1200	19.5/1255	9,000 psi	#5

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Gold Medal Plastic Target								
Win. 209	Red Diamond	WAA12				19.5/1255	9,400 psi	#5
Win. 209	Red Dot	Fed. 12S3	17.0/1090	17.5/1145	18.4/1175	19.0/1200	10,500 psi	
Win. 209	Solo 1000	Fed. 12S3	18.5/1125	19.0/1145	20.0/1200	21.5/1255	9,700 LUP	#1
Win. 209	Solo 1250	Fed. 12S3	25.0/1200	25.8/1230	26.5/1255	28.0/1310	10,100 LUP	#1
Win. 209	SR-7625	CB 2118-12	22.5/1095	24.0/1150	25.5/1200	27.0/1250	7,300 psi	
Win. 209	SR-7625	Fed. 12S3	23.0/1100	24.5/1155	25.5/1195	27.0/1255	7,500 psi	
Win. 209	SR-7625	Rem. Fig.-8	23.0/1095	24.5/1150	25.5/1190	27.0/1250	7,100 psi	
Win. 209	SR-7625	WAA12	22.5/1100	24.0/1155	25.0/1190	26.5/1250	7,400 psi	
Win. 209	SR-7625	Windjammer	23.0/1095	24.5/1140	26.0/1200	27.0/1245	6,900 psi	
Win. 209	Unique	Fed. 12S3	23.0/1200	23.5/1225	23.7/1235	24.0/1250	9,800 psi	
Win. 209	Universal	Rem. Fig.-8	24.0/1200	24.5/1230	25.0/1255	26.8/1310	9,500 psi	
Win. 209	Universal	WAA12	23.2/1200	23.9/1230	24.5/1255	25.0/1310	10,400 psi	
Win. 209	WST	BP SCAT	20.0/1165	20.5/1185	21.0/1200	21.5/1220	10,000 psi	#6
Win. 209	WST	Fed. 12S3				21.0/1200	9,500 psi	
Win. 209	WST	BP HCDP	20.5/1185	20.7/1190	21.0/1200	21.5/1220	10,000 psi	#3
Win. AATP	Clays	Windjammer	17.0/1090	17.3/1120	17.5/1145	19.0/1200	8,500 psi	
Win. AATP	International	WAA12SL	18.5/1090	19.3/1145	20.8/1200	22.0/1255	10,300 psi	
Federal: Paper								
CCI 109	Green Dot	Fed. 12C1	19.0/1145	19.4/1160	19.8/1175	20.5/1200	8,200 psi	
CCI 109	Red Dot	Fed. 12C1	18.5/1145	18.6/1160	18.7/1175	19.0/1200	9,200 psi	
CCI 109	Unique	Fed. 12C1				22.0/1200	7,500 psi	
CCI 209	Red Diamond	Fed. 12C1	17.5/1145	18.0/1175	18.5/1200	20.0/1255	10,200 psi	#5
CCI 209	Red Diamond	Fed. 12S4	17.0/1145	17.8/1175	18.5/1200	19.5/1255	10,000 psi	#5
CCI 209	Red Diamond	Pat. Ctrl. Red	17.5/1145	18.3/1175	19.0/1200	20.5/1255	9,200 psi	#5
CCI 209	Red Diamond	WAA12	17.0/1145	17.8/1175	18.5/1200	20.5/1255	10,000 psi	#5
CCI 209	Solo 1250	Fed. 12C1	27.0/1200	27.5/1230	28.0/1255	29.5/1310	9,400 psi	
CCI 209M	Green Dot	Fed. 12C1	20.0/1145	20.0/1145	21.5/1200	22.5/1255	8,500 psi	
CCI 209M	International	Pat. Ctrl. Red	21.2/1090	21.6/1120	21.9/1145	22.8/1200	8,900 LUP	
CCI 209M	International	Rem. Fig.-8	19.4/1090	20.3/1145	21.8/1200	22.6/1255	8,900 LUP	
CCI 209M	Nitro-100	Fed. 12C1	17.5/1145	17.8/1175	18.0/1200	19.0/1255	8,700 psi	#1
CCI 209M	R. Scot D	Fed. 12C1	19.5/1125	20.0/1145	21.0/1200	22.5/1255	10,900 LUP	
CCI 209M	Red Diamond	Fed. 12S4	17.5/1145	18.0/1175	18.5/1200	20.0/1255	9,800 psi	#5
CCI 209M	Red Diamond	Pat. Ctrl. Red	17.0/1145	17.8/1175	18.5/1200	19.5/1255	10,200 psi	#5
CCI 209M	Red Diamond	WAA12	17.0/1145	17.8/1175	18.5/1200	20.0/1255	9,400 psi	#5
CCI 209M	Red Diamond	Fed. 12C1	17.0/1145	17.8/1175	18.5/1200	20.5/1255	10,000 psi	#5
CCI 209M	Red Dot	Fed. 12C1	18.5/1145	19.3/1175	20.0/1200	21.0/1255	10,500 psi	
CCI 209M	Solo 1000	Fed. 12C1	18.5/1145	19.0/1175	19.5/1200	21.0/1255	9,600 psi	#1
CCI 209M	Solo 1250	Fed. 12C1				26.0/1310	7,700 psi	#1
CCI 209M	Unique	Fed. 12C1	24.0/1200	24.5/1255	25.7/1285	26.5/1310	9,400 psi	
CCI 209SC	American Select	Fed. 12S3	19.0/1145	19.4/1160	19.8/1175	20.5/1200	9,800 psi	
CCI 209SC	Clays	Fed. 12S4	17.5/1090	17.7/1110	17.8/1125	18.0/1145		
CCI 209SC	Clays	Windjam. II	17.0/1090	17.5/1120	18.0/1145	19.5/1200	10,800 psi	
CCI 209SC	International	Fed. 12S4	19.5/1090	20.0/1120	20.5/1145	21.5/1200	8,600 psi	
Fed. 209	International	Fed. 12S4	20.2/1090	20.8/1145	22.4/1200	23.6/1255	8,700 LUP	
Fed. 209	International	H. Versalite	21.1/1090	21.7/1145	23.2/1200	23.9/1255	8,200 LUP	
Fed. 209	International	Windjammer	21.2/1090	21.8/1145	23.2/1200	24.4/1255	7,400 LUP	
Fed. 209	R. Scot D	Claybuster	19.5/1125	20.5/1145	21.5/1200	23.0/1255	10,900 LUP	
Fed. 209	R. Scot D	Fed. 12C1	20.0/1125	20.5/1145	21.5/1200	23.0/1255	10,900 LUP	
Fed. 209	R. Scot D	Fed. 12S4	19.5/1125	20.0/1145	21.0/1200	22.5/1255	10,900 LUP	
Fed. 209	R. Scot D	Windjammer	19.5/1125	20.5/1145	21.5/1200	23.0/1255	10,900 LUP	
Fed. 209	R. Scot D	WAA12	20.0/1125	20.5/1145	21.5/1200	23.0/1255	10,900 LUP	
Fed. 209	Scot 453	Fed. 12C1	19.0/1125	20.0/1145	20.5/1175	21.0/1200	10,400 psi	
Fed. 209	Solo 1000	Claybuster	19.0/1125	20.0/1145	21.0/1200	22.5/1255		

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Paper								
Fed. 209	Solo 1000	Fed. 12C1	19.5/1125	20.0/1145	21.0/1200	22.5/1255		
Fed. 209	Solo 1000	Fed. 12S4	19.0/1125	19.5/1145	20.5/1200	22.0/1255		
Fed. 209	Solo 1000	WAA12	19.0/1125	20.0/1145	21.0/1200	22.5/1255		
Fed. 209	Solo 1000	Windjammer	19.5/1125	20.0/1145	21.0/1200	22.5/1255		
Fed. 209	Solo 1250	Fed. 12C1	26.5/1200	27.0/1230	27.5/1255	29.0/1310	9,900 psi	
Fed. 209	Solo 1250	H. Versalite	27.0/1200	27.5/1230	28.0/1255	30.0/1310	9,500 psi	
Fed. 209	Solo 1250	WAA12F114	27.0/1200	27.5/1230	28.0/1255	30.5/1310	9,500 psi	
Fed. 209	W 452AA	Fed. 12C1	21.0/1145	21.5/1165	22.0/1180	22.5/1200	9,300 LUP	
Fed. 209	W 452AA	Fed. 12S3	20.5/1145	21.0/1165	21.5/1180	22.0/1200	8,200 LUP	
Fed. 209	W 452AA	Fed. 12S3				22.0/1200	9,200 LUP	
Fed. 209A	Alliant e3	Claybuster 4118				15.5/1090	7,985 psi	
Fed. 209A	Alliant e3	Claybuster 3118-12AR				16.5/1145	9,375 psi	
Fed. 209A	Alliant e3	Rem. Fig. 8				17.0/1145	8,765 psi	
Fed. 209A	Alliant e3	Rem. RXP12				17.0/1145	9,280 psi	
Fed. 209A	Alliant e3	Fed. 12C1				17.0/1145	9,380 psi	
Fed. 209A	Alliant e3	Claybuster 4118				17.0/1145	9,385 psi	
Fed. 209A	Alliant e3	Fed. 12S3				17.0/1145	9,640 psi	
Fed. 209A	Alliant e3	WAA12 (white)				17.0/1145	9,815 psi	
Fed. 209A	Alliant e3	Rem. Fig. 8				18.0/1200	9,640 psi	
Fed. 209A	Alliant e3	Rem. RXP12				18.0/1200	10,320 psi	
Fed. 209A	Alliant e3	Claybuster 3118-12AR				18.0/1200	10,430 psi	
Fed. 209A	Alliant e3	WAA12 (white)				18.0/1200	10,780 psi	
Fed. 209A	Alliant e3	Claybuster 4118				18.5/1200	9,860 psi	
Fed. 209A	Alliant e3	Fed. 12S3				18.5/1200	10,955 psi	
Fed. 209A	#2 Improved	Fed. 12C1				20.0/1145	9,200 psi	#1
Fed. 209A	#2 Improved	Fed. 12S4	19.0/1145	19.3/1175	19.5/1200	20.5/1255	9,800 psi	#1
Fed. 209A	American Select	Claybuster	19.0/1145	19.4/1160	19.8/1175	20.5/1200	9,300 psi	
Fed. 209A	American Select	Fed. 12S3	19.0/1145	19.5/1160	20.1/1175	20.5/1200	10,400 psi	
Fed. 209A	American Select	H. Versalite	19.0/1145	19.3/1160	19.6/1175	20.0/1200	10,100 psi	
Fed. 209A	American Select	Rem. Fig.-8	19.0/1145	19.3/1160	19.6/1175	20.0/1200	9,800 psi	
Fed. 209A	American Select	WAA12	19.0/1145	19.5/1160	20.1/1175	20.5/1200	10,400 psi	
Fed. 209A	American Select	Windjammer	19.5/1145	19.6/1160	19.8/1175	20.0/1200	9,100 psi	
Fed. 209A	American Select	WT12 Orange	19.0/1145	19.4/1160	19.8/1175	20.5/1200	10,200 psi	
Fed. 209A	Clays	Fed. 12S3	17.0/1090	17.5/1120	18.0/1145	19.5/1200	10,500 psi	
Fed. 209A	Green Dot	Fed. 12C1	19.0/1145	20.0/1200	21.5/1255	24.5/1310	9,900 psi	
Fed. 209A	Green Dot	Fed. 12S3	19.5/1145	19.5/1145	21.0/1200	23.0/1255	9,100 psi	
Fed. 209A	Green Dot	Fiocchi FTW1	20.0/1145	20.3/1160	20.6/1175	21.0/1200	8,200 psi	
Fed. 209A	Green Dot	H. Versalite	19.5/1145	19.5/1145	21.0/1200	22.5/1255	8,500 psi	
Fed. 209A	Green Dot	Lage Uniwad	19.0/1145	19.3/1160	19.6/1175	20.0/1200	8,800 psi	
Fed. 209A	Green Dot	Pat. Ctrl. Red	20.0/1145	20.0/1145	21.0/1200	22.5/1255	9,600 psi	
Fed. 209A	Green Dot	Rem. R12H	19.5/1200	19.5/1200	19.5/1200	21.5/1255	9,900 psi	
Fed. 209A	Green Dot	Rem. R12L	19.0/1145	19.3/1160	19.6/1175	20.0/1200	8,600 psi	
Fed. 209A	Green Dot	Rem. RXP12	18.5/1145	20.0/1200	21.5/1255	24.5/1310	9,800 psi	
Fed. 209A	Green Dot	WAA12	18.5/1145	19.5/1200	21.5/1255	24.5/1310	9,700 psi	
Fed. 209A	Green Dot	Windjammer	20.5/1145	20.9/1160	21.3/1175	22.0/1200	7,700 psi	
Fed. 209A	International	Fed. 12S4	18.8/1090	19.5/1145	21.0/1200	22.0/1255	11,200 psi	
Fed. 209A	Nitro-100	BP Trap C	17.0/1145	17.5/1175	18.0/1200	19.0/1255	9,900 psi	#1
Fed. 209A	Nitro-100	Fed. 12C1	17.0/1145	17.8/1175	18.5/1200	20.0/1255	10,500 psi	#1
Fed. 209A	Nitro-100	Fed. 12S4	16.5/1145	17.0/1175	17.5/1200	19.0/1255	11,300 psi	#1
Fed. 209A	Nitro-100	Hawk II	17.0/1145	17.5/1175	18.0/1200	19.0/1255	9,500 psi	#1
Fed. 209A	Nitro-100	WAA12	16.5/1145	17.3/1175	18.0/1200	19.0/1255	10,000 psi	#1
Fed. 209A	Red Diamond	Fed. 12C1	17.5/1145	18.0/1175	18.5/1200	20.0/1255	10,600 psi	#5
Fed. 209A	Red Diamond	Fed. 12S4	17.0/1145	17.8/1175	18.5/1200	19.5/1255	10,700 psi	#5

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Paper								
Fed. 209A	Red Diamond	Pat. Ctrl. Red	17.0/1145	17.8/1175	18.5/1200	20.0/1255	9,900 psi	#5
Fed. 209A	Red Diamond	WAA12	17.0/1145	17.8/1175	18.5/1200	20.5/1255	10,200 psi	#5
Fed. 209A	Red Dot	Fed. 12C1	18.0/1145	18.6/1175	19.0/1200	21.0/1255	10,200 psi	
Fed. 209A	Red Dot	Fed. 12S3	18.0/1145	18.6/1175	19.0/1200	21.0/1255	9,400 psi	
Fed. 209A	Red Dot	Fiocchi FTW1	18.5/1145	18.7/1160	19.0/1175	19.5/1200	9,500 psi	
Fed. 209A	Red Dot	H. Versalite	18.0/1145	18.6/1175	19.0/1200	20.5/1255	9,900 psi	
Fed. 209A	Red Dot	Lage Uniwad	18.0/1145	18.1/1160	18.3/1175	18.5/1200	9,400 psi	
Fed. 209A	Red Dot	Pat. Ctrl. Red	18.0/1145	18.6/1175	19.0/1200	20.5/1255	10,700 psi	
Fed. 209A	Red Dot	Rem. R12H				19.0/1200	9,200 psi	
Fed. 209A	Red Dot	Rem. R12L	18.5/1145	18.8/1160	19.2/1175	19.5/1200	9,500 psi	
Fed. 209A	Red Dot	Rem. RXP12	18.0/1145	18.6/1175	19.0/1200	21.0/1255	10,000 psi	
Fed. 209A	Red Dot	WAA12	18.0/1145	18.2/1160	18.5/1175	19.0/1200	10,500 psi	
Fed. 209A	Red Dot	Windjammer	18.5/1145	18.6/1160	18.8/1175	19.0/1200	8,700 psi	
Fed. 209A	Solo 1000	BP Trap C	18.5/1145	19.0/1175	19.5/1200	20.5/1255	10,900 psi	#1
Fed. 209A	Solo 1000	Fed. 12C1	19.0/1145	19.5/1175	20.0/1200	22.0/1255	10,100 psi	#1
Fed. 209A	Solo 1000	Fed. 12S4	18.0/1145	18.5/1175	19.0/1200	20.5/1255	10,800 psi	#1
Fed. 209A	Solo 1000	Hawk II	18.0/1145	18.2/1160	18.5/1175	19.0/1200	10,200 psi	#1
Fed. 209A	Solo 1000	WAA12	18.0/1145	18.8/1175	19.5/1200	20.5/1255	10,500 psi	#1
Fed. 209A	Solo 1250	Fed. 12C1				26.0/1310	8,000 psi	#1
Fed. 209A	Solo 1250	H. Versalite				25.0/1310	8,500 psi	#1
Fed. 209A	Solo 1250	Hawk II	25.0/1255	25.2/1270	25.5/1285	26.0/1310	8,100 psi	#1
Fed. 209A	Solo 1250	WAA12F114				26.0/1310	9,200 psi	#1
Fed. 209A	Unique	Fed. 12C1	22.0/1200	22.0/1200	22.5/1255	26.5/1310	9,000 psi	
Fed. 209A	Unique	Fed. 12S3	22.0/1200	22.0/1200	23.0/1255	26.5/1310	9,700 psi	
Fed. 209A	Unique	H. Versalite	22.0/1200	22.3/1215	22.6/1230	23.0/1255	8,700 psi	
Fed. 209A	Unique	Lage Uniwad				22.0/1200	8,000 psi	
Fed. 209A	Unique	Pat. Ctrl. Red	22.5/1200	23.1/1215	23.7/1230	24.5/1255	8,500 psi	
Fed. 209A	Unique	Rem. R12H				22.5/1255	9,000 psi	
Fed. 209A	Unique	Rem. R12L				22.0/1200	7,800 psi	
Fed. 209A	Unique	Rem. RXP12	21.0/1200	22.0/1255	24.5/1285	26.5/1310	8,600 psi	
Fed. 209A	Unique	WAA12	21.0/1200	22.0/1255	24.5/1285	26.5/1310	9,100 psi	
Fed. 209A	Unique	Windjammer				23.5/1200	7,600 psi	
Fed. 209A	W 452AA	Fed. 12C1	21.0/1145	21.5/1165	22.0/1180	22.5/1200	9,200 LUP	
Fio. 616	Clays	H. Versalite	16.8/1090	17.2/1120	17.5/1145	19.0/1200	10,300 psi	
Fio. 616	International	Fiocchi TL1	19.9/1090	20.6/1145	22.5/1200	23.7/1255	9,200 LUP	
Fio. 616	Nitro-100	Fed. 12C1	17.5/1145	17.7/1160	18.0/1175	18.5/1200	8,000 psi	#1
Fio. 616	R.Scot D	Fed. 12C1	20.0/1125	20.5/1145	21.0/1175	21.5/1200	10,600 LUP	
Fio. 616	Red Diamond	Fed. 12C1	17.5/1145	18.0/1175	18.5/1200	20.0/1255	10,400 psi	#5
Fio. 616	Red Diamond	Fed. 12S4	17.0/1145	17.8/1175	18.5/1200	19.5/1255	10,600 psi	#5
Fio. 616	Red Diamond	Pat. Ctrl. Red	17.0/1145	17.8/1175	18.5/1200	20.0/1255	9,400 psi	#5
Fio. 616	Red Diamond	WAA12	17.0/1145	17.8/1175	18.5/1200	20.5/1255	9,900 psi	#5
Fio. 616	Solo 1000	Fed. 12C1	19.0/1145	19.2/1160	19.5/1175	20.0/1200	8,200 psi	#1
Fio. 616	Solo 1250	Fed. 12C1				26.0/1310	7,300 psi	#1
Rem. 209	Red Diamond	Fed. 12C1	17.5/1145	18.0/1175	18.5/1200	20.0/1255	9,800 psi	#5
Rem. 209	Red Diamond	Fed. 12S4	17.0/1145	17.8/1175	18.5/1200	19.5/1255	10,100 psi	#5
Rem. 209	Red Diamond	Pat. Ctrl. Red	17.5/1145	18.3/1175	19.0/1200	20.5/1255	9,400 psi	#5
Rem. 209	Red Diamond	WAA12	17.0/1145	17.8/1175	18.5/1200	20.5/1255	9,200 psi	#5
Rem. 209P	American Select	Fed. 12S3	19.0/1145	19.6/1160	20.2/1175	21.0/1200	9,700 psi	
Rem. 209P	Clays	Rem. Fig.-8	18.0/1090	18.3/1120	18.5/1145	19.5/1200	9,200 psi	
Rem. 209P	Green Dot	Fed. 12C1	20.0/1145	22.0/1200	23.5/1255	25.5/1310	9,300 psi	
Rem. 209P	Red Dot	Fed. 12C1	18.5/1145	19.3/1175	20.0/1200	21.5/1255	10,700 psi	
Rem. 209P	Solo 1250	Fed. 12C1	27.0/1200	27.5/1230	28.0/1255	29.5/1310	9,400 psi	
Rem. 209P	Unique	Fed. 12C1	24.0/1200	26.0/1255	26.9/1285	27.5/1310	8,300 psi	
Win. 209	American Select	Fed. 12S3	19.0/1145	19.4/1160	19.8/1175	20.5/1200	9,700 psi	
Win. 209	Clays	WAA12	17.0/1090	18.0/1145	18.5/1175	19.0/1200	10,900 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Paper								
Win. 209	Green Dot	Fed. 12C1	19.5/1145	19.5/1145	21.0/1200	22.5/1255	9,000 psi	
Win. 209	International	WAA12	20.0/1090	20.6/1145	21.6/1200	23.2/1255	8,600 LUP	
Win. 209	Nitro-100	Fed. 12C1	17.0/1145	17.5/1175	18.0/1200	19.0/1255	9,200 psi	#1
Win. 209	R.Scot D	Fed. 12C1	20.5/1125	21.0/1145	22.0/1200	23.5/1255	10,800 LUP	
Win. 209	Red Diamond	Fed. 12C1	17.5/1145	18.0/1175	18.5/1200	20.0/1255	10,300 psi	#5
Win. 209	Red Diamond	Fed. 12S4	17.0/1145	17.8/1175	18.5/1200	19.5/1255	10,500 psi	#5
Win. 209	Red Diamond	Pat. Ctrl. Red	17.0/1145	17.8/1175	18.5/1200	20.0/1255	9,300 psi	#5
Win. 209	Red Diamond	WAA12	17.0/1145	17.8/1175	18.5/1200	20.5/1255	10,500 psi	#5
Win. 209	Red Dot	Fed. 12C1	18.5/1145	19.1/1175	19.5/1200	21.0/1255	10,300 psi	
Win. 209	Solo 1000	Fed. 12C1	19.0/1145	19.5/1175	20.0/1200	21.0/1255	10,000 psi	#1
Win. 209	Solo 1250	Fed. 12C1				26.0/1310	8,100 psi	#1
Win. 209	Unique	Fed. 12C1	23.0/1200	24.5/1255	25.7/1285	26.5/1310	9,200 psi	
Win. 209	W 452AA	Fed. 12C1	21.0/1145	21.5/1165	22.0/1180	22.5/1200	9,600 LUP	
Win. 209	W 452AA	WAA12	20.5/1145	21.0/1165	21.5/1180	22.0/1200	9,900 LUP	
Win. AATP	International	WAA12	19.9/1145	19.9/1145	21.5/1200	23.0/1255	9,900 psi	

Load Notes: 1=Minimum overall length=2-10/32", maximum crimp depth=2/32". 5=Use 50-60 pounds wad pressure to ensure wad is firmly seated against powder.

Federal: Plastic (Paper Base Wad)								
CCI 209M	Green Dot	Fed. 12S3	20.0/1145	20.8/1175	21.2/1200	22.0/1255	9,600 psi	
CCI 209M	Red Dot	Fed. 12S3	18.5/1145	19.3/1175	20.0/1200	21.5/1255	10,100 psi	
CCI 209M	Unique	Fed. 12S3	24.0/1200	24.5/1220	25.0/1240	25.5/1255	8,400 psi	
Fed. 209	IMR 700-X	Fed. 12S3	18.0/1140	18.5/1160	19.0/1180	19.5/1200	8,800 LUP	
Fed. 209	IMR 700-X	Fed. 12S4				21.0/1255	8,800 LUP	
Fed. 209	IMR PB	Fed. 12S4	22.0/1150	23.0/1195	23.8/1225	24.5/1250	8,800 LUP	
Fed. 209	SR-7625	Fed. 12S4	24.5/1145	25.5/1190	26.3/1225	27.0/1260	8,800 LUP	
Fed. 209A	Green Dot	Fed. 12C1	20.5/1200	21.0/1220	21.5/1240	22.0/1255	10,100 psi	
Fed. 209A	Green Dot	Fed. 12S3	20.0/1145	20.8/1175	21.2/1200	22.0/1255	9,000 psi	
Fed. 209A	Green Dot	H. Versalite	19.5/1145	20.3/1175	21.5/1200	23.5/1255	8,600 psi	
Fed. 209A	Green Dot	Rem. RXP12	19.0/1145	19.8/1175	20.8/1200	22.5/1255	10,000 psi	
Fed. 209A	Green Dot	WAA12	18.5/1145	19.3/1175	19.9/1200	22.0/1255	10,300 psi	
Fed. 209A	Red Dot	Fed. 12C1				21.0/1255	10,200 psi	
Fed. 209A	Red Dot	Fed. 12S3	18.5/1145	19.3/1175	19.7/1200	21.5/1255	10,100 psi	
Fed. 209A	Red Dot	H. Versalite	18.5/1145	19.3/1175	19.7/1200	20.5/1255	9,700 psi	
Fed. 209A	Red Dot	Rem. RXP12	18.5/1145	19.3/1175	19.5/1200	21.0/1255	9,800 psi	
Fed. 209A	Red Dot	WAA12	18.5/1145	18.7/1175	18.8/1185	19.0/1200	9,800 psi	
Fed. 209A	Unique	Fed. 12S3	23.0/1200	23.3/1220	23.6/1240	24.0/1255	8,100 psi	
Fed. 209A	Unique	H. Versalite	22.5/1200	22.8/1220	23.1/1240	23.5/1255	8,200 psi	
Fed. 209A	Unique	Rem. RXP12	22.0/1200	22.3/1220	22.6/1240	23.0/1255	8,100 psi	
Fed. 209A	Unique	WAA12	21.0/1200	21.6/1220	22.3/1240	23.0/1255	8,600 psi	
Fed. 209A	Universal	Fed. 12S3	24.0/1200	24.5/1230	25.0/1255	26.5/1310	9,400 psi	
Rem. 209P	Green Dot	Fed. 12S3	21.0/1145	21.8/1175	22.2/1200	23.0/1255	8,500 psi	
Rem. 209P	Red Dot	Fed. 12S3	18.5/1145	19.3/1175	20.5/1200	22.0/1255	10,300 psi	
Win. 209	Green Dot	Fed. 12S3	20.0/1145	20.8/1175	21.6/1200	23.0/1255	9,400 psi	
Win. 209	Red Dot	Fed. 12S3	18.5/1145	19.3/1175	20.0/1200	21.5/1255	10,700 psi	
Win. 209	Unique	Fed. 12S3	23.5/1200	24.0/1220	24.5/1240	25.0/1255	9,100 psi	
Win. 209	Universal	WAA12	24.0/1200	24.5/1230	25.0/1255	26.5/1310	9,700 psi	
Fiocchi: Plastic (Low Base Wad)								
Fio. 616	American Select	BP HCD24	19.5/1200	19.7/1210	19.8/1215	20.0/1225	11,000 psi	#2
Fio. 616	American Select	BP Z21	19.5/1200	19.7/1210	19.8/1215	20.0/1225	11,100 psi	#4
Fio. 616	American Select	BP Zero	17.3/1150	18.0/1170	18.8/1200	20.3/1225	9,800 psi	
Fio. 616	Clays	BP HCDP	19.6/1200	20.0/1225	20.2/1235	20.4/1245	9,700 psi	#3
Fio. 616	IMR 800-X	BP HCDP	24.5/1220	24.7/1230	24.8/1235	25.0/1245	7,200 LUP	#3
Fio. 616	IMR PB	BP HCDP				24.0/1255	8,900 psi	#3

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Fiocchi: Plastic (Low Base Wad)								
Fio. 616	Nitro-100	BP HCDP	19.1/1200	19.6/1220	19.9/1235	20.2/1255	9,700 psi	#3
Fio. 616	Red Dot	BP HCDP	18.0/1145	18.2/1155	18.5/1175	18.8/1200	10,000 psi	#3
Fio. 616	Solo 1000	BP SCAT			20.0/1200	20.5/1225	8,700 psi	#6
Fio. 616	Solo 1000	BP HCDP	20.5/1225	20.7/1235	20.8/1245	21.0/1255	9,100 psi	#3
Fio. 616	Solo 1250	BP SCAT	27.0/1220	27.5/1240	27.7/1250	28.0/1260	8,200 psi	#6
Fio. 616	Solo 1250	BP HCDP	26.5/1200	27.5/1240	28.5/1255	29.5/1310	9,900 psi	#3
Fio. 616	SR-7625	BP HCDP	26.0/1250	26.5/1275	26.7/1285	27.0/1300	8,100 psi	#3
Win. 209	International	BP SCAT	19.7/1145	20.4/1175	21.0/1200	22.0/1255	8,800 LUP	#6
Win. 209	International	BP HCDP	21.0/1200	21.4/1225	21.7/1240	22.0/1255	8,800 LUP	#3

Load Notes: 2=Hex Cushion DR-24. 3= Helix Cushion Platform. 4=Trap Commander. 6=Scatter Master

Fiocchi, Victory, PMC and Nobel Sport Plastic (Low Base Wad)								
Fio. 616	IMR 700-X	CB 1100-12	17.5/1145				8,000 psi	
Fio. 616	IMR 700-X	CB 1100-12		18.5/1200			9,000 psi	
Fio. 616	IMR 700-X	Fio. 12GW	17.0/1145				9,100 psi	
Fio. 616	IMR 700-X	Fio. 12GW		18.0/1200			9,800 psi	
Fiocchi: Purple Target (High Base Wad)								
CCI 209	Clays	H. Versalite	17.9/1090	18.4/1120	18.9/1145	20.0/1200	7,700 LUP	
CCI 209	Red Diamond	Fed. 12S3	17.5/1145	18.3/1175	19.0/1200	20.5/1255	9,000 psi	#5
CCI 209	Red Diamond	Fiocchi TL1	17.5/1145	18.0/1175	18.5/1200	20.5/1255	8,800 psi	#5
CCI 209	Red Diamond	H. Versalite	17.5/1145	18.3/1175	19.0/1200	20.0/1255	9,300 psi	#5
CCI 209	Red Diamond	Hawk II	17.5/1145	18.3/1175	19.0/1200	20.0/1255	9,000 psi	#5
CCI 209	Red Diamond	Pat. Ctrl. White	17.5/1145	18.5/1175	19.5/1200	20.5/1255	8,700 psi	#5
CCI 209M	Green Dot	Rem. RXP12				24.0/1310	10,000 psi	
CCI 209M	International	H. Versalite	18.5/1090	19.5/1145	20.9/1200	22.0/1255	7,300 LUP	
CCI 209M	Nitro-100	Fed. 12S3	16.5/1145	16.7/1160	17.0/1175	17.5/1200	10,300 psi	#9
CCI 209M	R. Scot D	Fed. 12S3	18.0/1125	18.0/1145	19.2/1175	20.0/1200	9,900 LUP	
CCI 209M	Red Diamond	Fed. 12S3	17.0/1145	17.8/1175	18.5/1200	20.0/1255	9,600 psi	#5
CCI 209M	Red Diamond	Fiocchi TL1	16.5/1145	17.3/1175	18.0/1200	19.0/1255	9,800 psi	#5
CCI 209M	Red Diamond	H. Versalite	17.5/1145	18.0/1175	18.5/1200	19.5/1255	9,700 psi	#5
CCI 209M	Red Diamond	Hawk II	17.0/1145	17.8/1175	18.5/1200	20.0/1255	10,100 psi	#5
CCI 209M	Red Diamond	Pat. Ctrl. White	17.5/1145	18.3/1175	19.0/1200	20.0/1255	9,000 psi	#5
CCI 209M	Solo 1000	Fed. 12S3	17.5/1125	17.5/1145	18.5/1175	19.5/1200	8,800 LUP	#9
CCI 209M	Solo 1250	Fed. 12S3				25.5/1200	7,900 LUP	#9
CCI 209M	Unique	Rem. RXP12				26.5/1310	8,400 psi	
CCI 209SC	Clays	Fiocchi TL1	16.8/1090	17.1/1105	17.4/1120	18.0/1145	8,900 psi	
CCI 209SC	International	Fiocchi TL1	19.0/1090	19.5/1120	20.0/1145	21.0/1200	9,400 psi	
Fed. 209	Clays	Fed. 1283	17.1/1090	17.7/1120	18.3/1145	19.5/1200	8,500 LUP	
Fed. 209	Green Dot	Fed. 12S3				24.5/1310	10,300 psi	
Fed. 209	International	Fed. 12S3	20.0/1090	20.3/1120	20.5/1145	21.6/1200	8,100 LUP	
Fed. 209	R. Scot D	Fed. 12S3	18.5/1125	19.0/1145	20.0/1200	21.5/1255	10,400 LUP	
Fed. 209	Solo 1000	Fed. 12S3	18.0/1125	18.7/1155	19.5/1190	21.0/1255	9,400 LUP	#9
Fed. 209	Solo 1250	Fed. 12S3	26.5/1200	27.3/1230	28.0/1255	29.5/1310	10,000 LUP	#9
Fed. 209	Unique	Fed. 12S3				27.0/1310	9,200 psi	
Fed. 209A	Clays	Fed. 1233	16.5/1090	16.6/1105	16.8/1120	17.0/1145	10,000 psi	
Fed. 209A	International	Fiocchi TL1	18.0/1090	18.3/1120	18.5/1145	20.0/1200	10,400 psi	
Fed. 209A	Nitro-100	Fed. 12S3	16.5/1145	16.7/1160	17.0/1175	17.5/1200	10,500 psi	#9
Fed. 209A	Red Diamond	Fed. 12S3	17.0/1145	17.8/1175	18.5/1200	19.5/1255	10,300 psi	#5
Fed. 209A	Red Diamond	Fiocchi TL1	16.5/1145	17.3/1175	18.0/1200	19.0/1255	10,400 psi	#5
Fed. 209A	Red Diamond	H. Versalite	17.0/1145	17.5/1175	18.0/1200	19.0/1255	10,400 psi	#5

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Fiocchi: Purple Target (High Base Wad)								
Fed. 209A	Red Diamond	Hawk II	17.0/1145	17.5/1175	18.0/1200	19.5/1255	10,600 psi	#5
Fed. 209A	Red Diamond	Pat. Ctrl. White	17.0/1145	17.5/1175	18.0/1200	19.5/1255	10,000 psi	#5
Fed. 209A	Solo 1250	Fed. 12S3				26.5/1200	6,900 psi	#9
Fio. 616	#2 Improved	Fed. 12S3	17.5/1125	18.0/1145	18.5/1175	19.0/1200	10,700 psi	
Fio. 616	American Select	Claybuster Red	18.0/1090	19.5/1145	21.0/1200	22.5/1250	10,700 psi	
Fio. 616	American Select	CS12S	20.0/1200	20.2/1220	20.3/1230	20.5/1245	11,400 psi	
Fio. 616	American Select	Fed. 12S3	17.5/1090	19.0/1145	20.5/1200	22.0/1250	10,300 psi	
Fio. 616	American Select	Fiocchi TL1	18.0/1090	19.5/1145	20.5/1200	22.0/1250	10,200 psi	
Fio. 616	American Select	BP HCDP	20.5/1200	20.7/1205	20.8/1210	21.0/1220	10,800 psi	#3
Fio. 616	American Select	SF12 STR-8				19.8/1200	10,200 psi	
Fio. 616	Clays	Fiocchi TL1	16.5/1090	17.9/1145	18.7/1175	19.4/1200	9,100 LUP	
Fio. 616	Clays	BP HCDP	19.2/1200	19.7/1225	19.8/1235	19.9/1245	9,700 psi	#3
Fio. 616	Green Dot	Fed. 12C1	18.5/1090	19.5/1145	21.0/1200	22.5/1250	9,300 psi	
Fio. 616	Green Dot	Fed. 12S3	18.5/1090	19.3/1120	20.0/1145	25.0/1310	9,600 psi	
Fio. 616	Green Dot	Fiocchi FTW1	18.5/1090	20.0/1145	21.0/1200	23.0/1250	9,200 psi	
Fio. 616	Green Dot	H. Versalite	18.5/1090	19.5/1145	21.0/1200	22.5/1250	9,300 psi	
Fio. 616	Green Dot	Rem. Fig.-8	18.5/1090	20.0/1145	21.5/1200	23.0/1250	8,800 psi	
Fio. 616	Green Dot	Rem. RXP12	18.5/1090	20.0/1145	21.5/1200	23.0/1250	9,200 psi	
Fio. 616	Green Dot	WAA12	18.5/1090	20.0/1145	21.5/1200	23.0/1250	8,900 psi	
Fio. 616	Green Dot	Windjammer	19.5/1145	21.8/1225	21.8/1225	22.5/1250	9,000 psi	
Fio. 616	Herco	Fed. 12C1				26.0/1250	7,500 psi	
Fio. 616	Herco	Fiocchi FTW1				26.0/1250	8,300 psi	
Fio. 616	Herco	H. Versalite				25.5/1250	7,700 psi	
Fio. 616	Herco	Rem. Fig.-8				26.0/1250	7,300 psi	
Fio. 616	Herco	Rem. RXP12				26.0/1250	7,500 psi	
Fio. 616	Herco	WAA12				26.0/1250	7,900 psi	
Fio. 616	Herco	Windjammer				26.5/1250	7,700 psi	
Fio. 616	IMR 800-X	BP HCDP	23.8/1220	24.1/1230	24.3/1235	24.6/1245	7,200 LUP	#3
Fio. 616	IMR PB	BP HCDP				23.8/1255	8,900 psi	#3
Fio. 616	International	Fiocchi TL1	19.3/1090	20.3/1145	21.0/1200	22.6/1255	9,900 LUP	
Fio. 616	Nitro-100	Fed. 12S3	16.5/1145	17.0/1175	17.5/1200	18.5/1255	10,900 psi	#9
Fio. 616	Nitro-100	BP HCDP	18.9/1200	19.2/1220	19.5/1235	20.0/1255	9,700 psi	#3
Fio. 616	R. Scot D	Fed. 12S3	18.5/1125	19.0/1145	20.0/1200	21.5/1255	9,900 LUP	
Fio. 616	Red Diamond	Fed. 12S3	17.0/1145	17.8/1175	18.5/1200	19.5/1255	10,300 psi	#5
Fio. 616	Red Diamond	Fiocchi TL1	16.5/1145	17.3/1175	18.0/1200	19.0/1255	10,700 psi	#5
Fio. 616	Red Diamond	H. Versalite	17.0/1145	17.5/1175	18.0/1200	19.0/1255	10,000 psi	#5
Fio. 616	Red Diamond	Hawk II	11.0/1145	14.5/1175	18.0/1200	19.5/1255	10,400 psi	#5
Fio. 616	Red Diamond	Pat. Ctrl. White	17.0/1145	17.5/1175	18.0/1200	19.5/1255	9,300 psi	#5
Fio. 616	Red Dot	Fed. 12C1	18.0/1145	19.0/1200	19.7/1225	20.5/1250	10,700 psi	
Fio. 616	Red Dot	Fed. 12S3	16.0/1090	18.0/1145	18.6/1175	19.0/1200	9,700 psi	
Fio. 616	Red Dot	Fiocchi FTW1	16.5/1090	17.5/1145	19.0/1200	21.0/1250	10,500 psi	
Fio. 616	Red Dot	H. Versalite	16.5/1090	17.1/1120	17.5/1145	18.5/1200	9,500 psi	
Fio. 616	Red Dot	BP HCDP				18.5/1200	10,000 psi	#3
Fio. 616	Red Dot	Rem. Fig.-8	16.0/1090	18.0/1145	19.5/1200	20.5/1250	10,200 psi	
Fio. 616	Red Dot	Rem. RXP12	16.5/1090	17.3/1120	18.0/1145	19.5/1200	9,700 psi	
Fio. 616	Red Dot	WAA12	17.0/1090	17.6/1120	18.0/1145	19.5/1200	9,400 psi	
Fio. 616	Red Dot	WAA12SL	17.0/1090	17.3/1120	17.6/1120	18.0/1145	8,300 psi	
Fio. 616	Red Dot	Windjammer	18.5/1145	20.0/1200	20.5/1225	21.0/1250	9,400 psi	
Fio. 616	Scot 453	Fiocchi TL1	17.5/1125	18.0/1145	18.5/1175	19.0/1200	10,700 psi	
Fio. 616	Solo 1000	Fed. 12S3	18.0/1125	18.5/1145	19.5/1200	21.0/1255	9,100 LUP	#9
Fio. 616	Solo 1000	BP HCDP				20.7/1310	9,100 psi	#3
Fio. 616	Solo 1250	Fed. 12S3	26.0/1200	26.8/1230	27.5/1255	29.5/1310	10,200 LUP	#9
Fio. 616	Solo 1250	BP HCDP	26.2/1200	27.2/1240	28.2/1255	29.0/1310	9,900 psi	#3
Fio. 616	SR-7625	BP HCDP	25.7/1250	26.3/1280	26.5/1260	26.8/1300	8,100 psi	#3

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Fiocchi: Purple Target (High Base Wad)								
Fio. 616	Unique	Fed. 12C1	23.5/1200	24.0/1225	24.2/1235	24.5/1250	8,000 psi	
Fio. 616	Unique	Fed. 12S3				27.0/1310	8,600 psi	
Fio. 616	Unique	Fiocchi FTW1		23.5/1200	24.0/1225	24.5/1250	8,200 psi	
Fio. 616	Unique	H. Versalite	24.0/1200	24.5/1225	24.7/1235	25.0/1250	7,800 psi	
Fio. 616	Unique	Rem. Fig.-8	23.5/1200	24.0/1225	24.2/1235	24.5/1250	7,600 psi	
Fio. 616	Unique	Rem. RXP12	22.5/1200	23.0/1225	23.2/1235	23.5/1250	8,200 psi	
Fio. 616	Unique	WAA12	23.5/1200	23.8/1210	24.2/1225	25.0/1250	7,800 psi	
Fio. 616	Unique	Windjammer	24.0/1200	24.7/1225	25.1/1235	25.5/1250	6,900 psi	
Fio. 616	Universal	Fiocchi TL1	23.4/1200	24.2/1230	25.0/1255	26.5/1310	10,600 psi	
Rem. 209	Red Diamond	Fed. 12S3	17.5/1145	18.3/1175	19.0/1200	21.0/1255	8,900 psi	#5
Rem. 209	Red Diamond	Fiocchi TL1	17.5/1145	18.3/1175	19.0/1200	20.5/1255	8,600 psi	#5
Rem. 209	Red Diamond	H. Versalite	18.0/1145	18.5/1175	19.0/1200	20.5/1255	9,100 psi	#5
Rem. 209	Red Diamond	Hawk II	17.5/1145	18.3/1175	19.0/1200	21.0/1255	9,300 psi	#5
Rem. 209	Red Diamond	Pat. Ctrl. White	18.0/1145	18.8/1175	19.5/1200	21.0/1255	8,500 psi	#5
Rem. 209P	Clays	Rem. Fig.-8	17.6/1090	18.8/1145	19.4/1175	19.9/1200	7,500 LUP	
Rem. 209P	Nitro-100	Fed. 12S3	16.5/1145	16.7/1160	17.0/1175	17.5/1200	9,100 psi	#9
Rem. 209P	R. Scot D	Fed. 12S3	19.0/1125	19.5/1145	20.0/1175	20.5/1200	9,000 LUP	
Rem. 209P	Solo 1000	Fed. 12S3	18.5/1125	19.0/1145	19.5/1175	20.0/1200	8,000 LUP	#9
Rem. 209P	Solo 1250	Fed. 12S3	26.5/1200	27.0/1235	27.6/1280	28.5/1310	10,100 LUP	#9
Win. 209	Clays	WAA12	16.3/1090	17.0/1120	17.6/1145	18.9/1200	9,200 LUP	
Win. 209	Green Dot	WAA12				25.0/1310	8,700 psi	
Win. 209	International	BP HCDP	20.7/1200	21.1/1225	21.4/1240	21.7/1255	8,800 LUP	#3
Win. 209	International	WAA12	19.2/1090	19.7/1145	21.0/1200	22.0/1255	9,800 LUP	
Win. 209	Nitro-100	Fed. 12S3	16.5/1145	17.0/1175	17.5/1200	18.5/1255	10,700 psi	#9
Win. 209	R. Scot D	Fed. 12S3	18.5/1125	19.5/1145	20.5/1200	21.5/1255	10,000 LUP	
Win. 209	Red Diamond	Fed. 12S3	17.0/1145	17.8/1175	18.5/1200	19.5/1255	10,100 psi	#5
Win. 209	Red Diamond	Fiocchi TL1	16.5/1145	17.3/1175	18.0/1200	19.0/1255	10,400 psi	#5
Win. 209	Red Diamond	H. Versalite	17.0/1145	17.5/1175	18.0/1200	19.0/1255	10,200 psi	#5
Win. 209	Red Diamond	Hawk II	17.0/1145	17.5/1175	18.0/1200	19.5/1255	11,000 psi	#5
Win. 209	Red Diamond	Pat. Ctrl. White	17.0/1145	17.5/1175	18.0/1200	19.0/1255	9,900 psi	#5
Win. 209	Solo 1000	Fed. 12S3	18.0/1125	19.0/1145	20.0/1200	21.0/1255	9,100 LUP	#9
Win. 209	Solo 1250	Fed. 12S3	26.5/1200	27.3/1230	28.0/1255	29.5/1310	9,900 LUP	#9
Win. 209	Unique	WAA12				26.5/1310	8,300 psi	
Win. 209	Universal	WAA12	23.3/1200	24.0/1255	24.5/1285	25.0/1310	10,800 psi	
Win. AATP	Clays	WAA12	16.2/1090	16.4/1105	16.6/1120	17.0/1145	9,300 psi	
Win. AATP	International	WAA12	17.8/1090	18.5/1145	20.2/1200	21.0/1255	10,900 psi	
Remington: Premier & Nitro 27 & STS Plastic Target								
CCI 209	Clays	Windjammer	16.6/1090	17.3/1120	18.0/1145	19.4/1200	8,600 LUP	
CCI 209	Green Dot	Rem. Fig.-8	19.5/1145	19.9/1160	20.3/1175	21.0/1200	8,700 psi	
CCI 209	IMR 800-X	CB 1118-12	19.5/1095	21.0/1155	22.0/1195	23.5/1255	8,400 psi	
CCI 209	IMR 800-X	Fed. 12S3	19.5/1100	20.5/1140	22.0/1200	23.5/1260	9,400 psi	
CCI 209	IMR 800-X	BP HCDP				23.5/1260	9,300 psi	#3
CCI 209	IMR 800-X	Rem. Fig.-8	19.5/1095	21.0/1155	22.0/1190	24.0/1265	8,700 psi	
CCI 209	IMR 800-X	WAA12	19.5/1105	20.5/1150	21.5/1190	23.0/1255	9,100 psi	
CCI 209	IMR 800-X	Windjammer	20.0/1095	21.0/1145	22.0/1195	23.5/1250	8,200 psi	
CCI 209	International	Windjammer	19.2/1090	19.8/1145	21.2/1200	22.3/1255	8,300 LUP	
CCI 209	Nitro-100	Rem. Fig.-8				16.0/1145	8,600 psi	#9
CCI 209	Nitro-100	Rem. RXP12	15.5/1145	15.9/1160	16.3/1175	17.0/1200	10,300 psi	#9
CCI 209	Nitro-100	Rem. TGT12	16.0/1145	16.2/1160	16.5/1175	17.0/1200	10,300 psi	#9
CCI 209	R. Scot D	Rem. Fig.-8	18.5/1125	19.0/1145	19.8/1175	20.5/1200	10,400 LUP	
CCI 209	R. Scot D	Rem. RXP12	18.5/1125	19.0/1145	19.8/1175	20.5/1200	9,900 LUP	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: Premier & Nitro 27 & STS Plastic Target								
CCI 209	R. Scot D	Rem. TGT12	18.5/1125	19.0/1145	19.8/1175	20.5/1200	10,400 LUP	
CCI 209	Red Diamond	H. Versalite	16.0/1145	16.5/1175	17.0/1200	18.5/1255	9,900 psi	#5
CCI 209	Red Diamond	Pat. Ctrl. Red	16.5/1145	17.0/1175	17.5/1200	19.0/1255	9,600 psi	#5
CCI 209	Red Diamond	Rem. Fig.-8	16.0/1145	16.8/1175	17.5/1200	19.0/1255	9,600 psi	#5
CCI 209	Red Diamond	Rem. RXP12	16.0/1145	16.8/1175	17.5/1200	19.0/1255	10,200 psi	#5
CCI 209	Red Diamond	Rem. TGT12	16.0/1145	16.8/1175	17.5/1200	19.0/1255	9,300 psi	#5
CCI 209	Red Dot	Rem. Fig.-8	17.5/1145	18.0/1160	18.6/1175	19.5/1200	9,900 psi	
CCI 209	Solo 1000	Rem. Fig.-8	18.0/1125	18.5/1145	19.3/1175	20.0/1200	9,200 LUP	#9
CCI 209	Solo 1000	Rem. RXP12	18.0/1125	18.5/1145	19.3/1175	20.0/1200	9,500 LUP	#9
CCI 209	Solo 1000	Rem. TGT12	18.0/1125	18.5/1145	19.3/1175	20.0/1200	9,600 LUP	#9
CCI 209	Solo 1250	Rem. Fig.-8	25.0/1200	25.8/1235	26.8/1280	27.5/1310	10,500 LUP	#9
CCI 209	Unique	Rem. Fig.-8				22.5/1200	8,500 psi	
CCI 209	Universal	Windjammer	23.2/1200	23.8/1230	24.4/1255	25.7/1310	10,200 psi	
CCI 209	WSL	Fed. 12S3				18.0/1145	8,600 psi	
CCI 209	WSL	Rem. Fig.-8	19.0/1200	19.3/1220	19.7/1235	20.0/1255	10,600 psi	
CCI 209	WSL	Rem. RXP12	19.0/1200	19.3/1220	19.7/1235	20.0/1255	10,900 psi	
CCI 209	WSL	WAA12	18.0/1145	18.3/1165	18.7/1180	19.0/1200	10,800 psi	
CCI 209	WSL	WAA12SL	19.0/1200	19.3/1220	19.7/1235	20.0/1255	10,900 psi	
CCI 209	WST	Rem. Fig.-8				18.5/1145	10,200 psi	
CCI 209	WST	Rem. RXP12				18.5/1145	10,800 psi	
CCI 209	WST	WAA12				18.0/1145	10,800 psi	
CCI 209M	Green Dot	Fed. 12S3	17.5/1090	19.0/1145	20.5/1200	21.5/1250	10,600 psi	
CCI 209M	Green Dot	Fiocchi FTW1	17.5/1090	19.5/1145	20.1/1175	20.5/1200	9,700 psi	
CCI 209M	Green Dot	H. Versalite	19.0/1145	19.6/1175	20.0/1200	21.5/1250	10,200 psi	
CCI 209M	Green Dot	Pat. Ctrl. Red	18.0/1090	19.0/1145	20.5/1200	22.0/1250	9,600 psi	
CCI 209M	Green Dot	Rem. Fig.-8	18.0/1090	19.0/1145	19.6/1175	20.0/1200	9,300 psi	
CCI 209M	Green Dot	Rem. RXP12	17.5/1090	19.0/1145	20.5/1200	22.0/1250	9,600 psi	
CCI 209M	Green Dot	WAA12	17.0/1090	19.0/1145	21.0/1200	22.5/1250	10,700 psi	
CCI 209M	Green Dot	Windjammer	18.0/1090	19.5/1145	20.5/1200	22.0/1250	9,400 psi	
CCI 209M	Herco	Fed. 12S3				24.5/1250	9,900 psi	
CCI 209M	Herco	H. Versalite				24.5/1250	9,900 psi	
CCI 209M	Herco	Pat. Ctrl. Red				25.0/1250	9,500 psi	
CCI 209M	Herco	Rem. RXP12	24.5/1250	24.5/1250	24.5/1250	26.5/1310	9,700 psi	
CCI 209M	Herco	WAA12				24.5/1250	10,400 psi	
CCI 209M	Herco	Windjammer				25.0/1250	9,400 psi	
CCI 209M	R. Scot D	Rem. Fig.-8	17.5/1125	18.0/1145	18.8/1175	19.5/1200	10,900 LUP	
CCI 209M	R. Scot D	Rem. RXP12				17.5/1125	9,800 LUP	
CCI 209M	R. Scot D	Rem. TGT12				17.5/1125	10,400 LUP	
CCI 209M	Red Diamond	H. Versalite	15.5/1145	16.3/1175	17.0/1200	18.5/1255	10,000 psi	#5
CCI 209M	Red Diamond	Pat. Ctrl. Red	16.0/1145	16.8/1175	17.5/1200	19.0/1255	9,700 psi	#5
CCI 209M	Red Diamond	Rem. Fig.-8	16.0/1145	16.8/1175	17.5/1200	19.0/1255	10,000 psi	#5
CCI 209M	Red Diamond	Rem. RXP12	16.0/1145	16.8/1175	17.5/1200	19.0/1255	10,200 psi	#5
CCI 209M	Red Diamond	Rem. TGT12	16.0/1145	16.8/1175	17.5/1200	19.0/1255	9,300 psi	#5
CCI 209M	Red Dot	Fed. 12S3	16.0/1145	16.7/1115	17.1/1130	17.5/1145	10,600 psi	
CCI 209M	Red Dot	Fiocchi FTW1	16.5/1090	17.0/1145	17.8/1175	18.5/1200	10,600 psi	
CCI 209M	Red Dot	H. Versalite	17.0/1145	17.5/1160	18.1/1175	19.0/1200	10,400 psi	
CCI 209M	Red Dot	Pat. Ctrl. Red	16.5/1090	17.0/1145	18.2/1175	19.0/1200	10,400 psi	
CCI 209M	Red Dot	Rem. Fig.-8	16.5/1090	17.5/1145	18.1/1175	18.5/1200	10,400 psi	
CCI 209M	Red Dot	Rem. RXP12	16.0/1090	17.0/1145	17.8/1175	18.5/1200	10,500 psi	
CCI 209M	Red Dot	WAA12	16.0/1090	16.2/1115	16.3/1130	16.5/1145	10,200 psi	
CCI 209M	Red Dot	Windjammer	16.5/1090	17.0/1145	17.8/1175	18.5/1200	9,700 psi	
CCI 209M	Solo 1000	Rem. Fig.-8	17.0/1125	17.5/1145	18.3/1175	19.0/1200	10,800 LUP	#9
CCI 209M	Solo 1000	Rem. RXP12				17.0/1125	9,600 LUP	#9

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: Premier & Nitro 27 & STS Plastic Target								
CCI 209M	Solo 1000	Rem. TGT12				17.0/1125	9,900 LUP	#9
CCI 209M	Solo 1250	Rem. Fig.-8				23.5/1200	8,600 LUP	#9
CCI 209M	Unique	Fed. 12S3	22.0/1200	22.7/1225	23.0/1235	23.5/1250	10,200 psi	
CCI 209M	Unique	H. Versalite	22.0/1200	22.8/1225	23.1/1235	23.5/1250	9,900 psi	
CCI 209M	Unique	Pat. Ctrl. Red	22.5/1200	23.3/1225	23.6/1235	24.0/1250	9,400 psi	
CCI 209M	Unique	Rem. Fig.-8				22.5/1200	9,500 psi	
CCI 209M	Unique	Rem. RXP12	22.5/1200	24.0/1250	24.5/1280	25.0/1310	10,000 psi	
CCI 209M	Unique	WAA12	22.0/1200	23.0/1225	23.4/1235	24.0/1250	10,300 psi	
CCI 209M	Unique	Windjammer	23.5/1200	24.3/1225	24.6/1235	25.0/1250	9,300 psi	
CCI 209M	Universal	H. Versalite	21.1/1200	21.8/1230	22.5/1255	24.3/1310	10,400 psi	
CCI 209SC	American Select	Rem. Fig.-8	18.5/1145	18.8/1160	19.2/1175	20.0/1200	10,300 psi	
CCI 209SC	Clays	Rem. Fig.-8	16.0/1090	16.5/1120	17.0/1145	18.0/1200	8,800 psi	
CCI 209SC	Green Dot	Fed. 12S3	19.5/1145	19.6/1160	19.8/1175	20.0/1200	10,600 psi	
CCI 209SC	Green Dot	Rem. Fig.-8	20.5/1145	20.6/1160	20.8/1175	21.0/1200	10,600 psi	
CCI 209SC	Green Dot	WAA12				20.0/1145	10,600 psi	
CCI 209SC	Green Dot	Windjammer				22.0/1200	10,400 psi	
CCI 209SC	International	Rem. Fig.-8	18.0/1090	19.0/1145	20.3/1200	22.0/1255	10,300 psi	
CCI 209SC	Red Dot	Fed. 12S3				18.5/1145	10,400 psi	
CCI 209SC	Red Dot	Rem. Fig.-8				18.0/1145	10,400 psi	
CCI 209SC	Red Dot	Windjammer				18.5/1145	9,800 psi	
Fed. 209	Clays	Pat. Ctrl. Red	16.3/1090	17.8/1145	18.6/1175	19.3/1200	9,200 LUP	
Fed. 209	Green Dot	Rem. RXP12				22.0/1250	10,500 psi	
Fed. 209	Herco	Rem. RXP12				27.0/1310	9,200 psi	
Fed. 209	International	Pat. Ctrl. Red	19.2/1090	19.7/1145	21.2/1200	22.0/1255	9,200 LUP	
Fed. 209	Nitro-100	Rem. Fig.-8				18.5/1200		
Fed. 209	Nitro-100	Rem. RXP12	17.0/1145	17.8/1180	18.4/1215	19.5/1255		
Fed. 209	R. Scot D	Rem. Fig.-8	18.0/1125	18.5/1145	19.3/1175	20.0/1200	10,300 LUP	
Fed. 209	R. Scot D	Rem. RXP12	18.0/1125	18.7/1150	19.4/1175	20.0/1200	10,900 LUP	
Fed. 209	R. Scot D	Rem. TGT12	18.0/1125	18.5/1145	19.3/1175	20.0/1200	10,900 LUP	
Fed. 209	Red Dot	Rem. Fig.-8				16.0/1090	9,800 psi	
Fed. 209	Solo 1000	Rem. Fig.-8	17.5/1125	18.2/1150	18.8/1175	19.5/1200	10,100 LUP	#9
Fed. 209	Solo 1000	Rem. RXP12					8,900 LUP	#9
Fed. 209	Solo 1000	Rem. TGT12					9,200 LUP	#9
Fed. 209	Solo 1250	Rem. Fig.-8					8,600 LUP	#9
Fed. 209	Unique	Rem. RXP12					10,100 psi	
Fed. 209	Universal	Fed. 12S3	22.5/1200	23.0/1230	23.5/1255	24.0/1310	11,500 psi	
Fed. 209	WSL	Fed. 12S3		18.5/1145	19.0/1200	20.5/1255	10,400 psi	
Fed. 209	WSL	Rem. Fig.-8	20.0/1200	20.3/1220	20.7/1235	21.0/1255	9,180 psi	
Fed. 209	WSL	Rem. RXP12	19.5/1200	20.0/1220	20.5/1235	21.0/1255	9,900 psi	
Fed. 209	WSL	WAA12	18.0/1145	18.5/1175	19.0/1200	20.5/1255	9,900 psi	
Fed. 209	WSL	WAA12SL	18.5/1145	19.3/1175	20.0/1200	21.0/1255	10,400 psi	
Fed. 209	WST	Rem. Fig.-8				18.5/1145	10,000 psi	
Fed. 209	WST	Rem. RXP12				18.5/1145	10,000 psi	
Fed. 209A	American Select	Rem. Fig.-8	18.5/1145	18.8/1160	19.2/1175	20.0/1200	10,700 psi	
Fed. 209A	Clays	Pat. Ctrl. Red	15.8/1090	16.2/1120	16.6/1145	18.0/1200	11,300 psi	
Fed. 209A	Green Dot	Fed. 12S3				19.0/1145	9,900 psi	
Fed. 209A	Green Dot	Pat. Ctrl. Red				19.5/1145	10,000 psi	
Fed. 209A	Green Dot	Rem. Fig.-8	19.5/1145	19.8/1160	20.1/1175	20.5/1200	10,500 psi	
Fed. 209A	Green Dot	Rem. RXP12	19.5/1145	19.9/1160	20.3/1175	21.0/1200	10,400 psi	
Fed. 209A	Green Dot	Windjammer				20.0/1145	9,600 psi	
Fed. 209A	IMR 700-X	CB 1118-12	15.5/1110	16.0/1135	16.5/1160	17.5/1200	10,800 psi	
Fed. 209A	IMR 700-X	Fed. 12S3	15.0/1095	16.0/1135	16.8/1170	17.5/1200	11,500 psi	
Fed. 209A	IMR 700-X	BP HCDP				17.0/1200	10,200 psi	#3

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: Premier & Nitro 27 & STS Plastic Target								
Fed. 209A	IMR 700-X	Rem. Fig.-8	15.5/1105	16.0/1130	16.5/1150	17.5/1195	11,000 psi	
Fed. 209A	IMR 700-X	WAA12	15.0/1100	15.4/1115	15.8/1130	16.5/1160	10,900 psi	
Fed. 209A	IMR 700-X	Windjammer	15.5/1110	16.5/1155	17.5/1200	18.5/1240	11,100 psi	
Fed. 209A	IMR 800-X	CB 1118-12	19.5/1105	20.5/1150	21.5/1200	23.0/1250	9,000 psi	
Fed. 209A	IMR 800-X	Fed. 12S3	19.0/1100	20.0/1140	21.5/1205	23.0/1260	9,900 psi	
Fed. 209A	IMR 800-X	BP HCDP				23.5/1260	9,900 psi	#3
Fed. 209A	IMR 800-X	Rem. Fig.-8	19.5/1100	20.5/1140	22.0/1200	23.5/1260	9,200 psi	
Fed. 209A	IMR 800-X	WAA12	19.0/1095	20.0/1145	21.0/1190	22.5/1250	9,700 psi	
Fed. 209A	IMR 800-X	Windjammer	20.0/1110	21.0/1160	22.0/1205	23.0/1250	8,800 psi	
Fed. 209A	IMR PB	CB 1118-12	19.0/1100	20.5/1150	22.0/1205	23.5/1260	9,500 psi	
Fed. 209A	IMR PB	Fed. 12S4	18.5/1105	19.5/1140	21.0/1190	23.0/1265	10,900 psi	
Fed. 209A	IMR PB	BP HCDP				23.0/1270	10,800 psi	#3
Fed. 209A	IMR PB	Rem. Fig.-8	19.5/1110	20.5/1150	22.0/1200	23.5/1255	9,600 psi	
Fed. 209A	IMR PB	WAA12	18.5/1100	20.0/1155	21.0/1190	23.0/1260	11,000 psi	
Fed. 209A	IMR PB	Windjammer	19.5/1100	20.5/1145	22.0/1200	23.5/1260	9,500 psi	
Fed. 209A	Nitro-100	Rem. RXP12	15.5/1145	15.7/1160	16.0/1175	16.5/1200	10,800 psi	#9
Fed. 209A	Nitro-100	Rem. TGT12	15.5/1145	15.7/1160	16.0/1175	16.5/1200	10,700 psi	#9
Fed. 209A	Red Diamond	H. Versalite	15.5/1145	16.3/1175	17.0/1200	18.5/1255	10,500 psi	#5
Fed. 209A	Red Diamond	Pat. Ctrl. Red	16.0/1145	16.8/1175	17.5/1200	19.0/1255	10,400 psi	#5
Fed. 209A	Red Diamond	Rem. Fig.-8	16.0/1145	16.8/1175	17.5/1200	19.0/1255	10,200 psi	#5
Fed. 209A	Red Diamond	Rem. RXP12	16.0/1145	16.8/1175	17.5/1200	19.0/1255	10,800 psi	#5
Fed. 209A	Red Diamond	Rem. TGT12	16.0/1145	16.8/1175	17.5/1200	19.0/1255	10,000 psi	#5
Fed. 209A	Red Dot	Fed. S3				16.5/1145	10,100 psi	
Fed. 209A	Red Dot	Pat. Ctrl. Red				17.0/1145	10,700 psi	
Fed. 209A	Red Dot	Rem. Fig.-8	16.5/1145	16.6/1160	16.8/1175	17.0/1200	10,400 psi	
Fed. 209A	Red Dot	Rem. RXP12	16.0/1145	16.3/1160	16.6/1175	17.0/1200	10,100 psi	
Fed. 209A	Red Dot	Windjammer				17.5/1145	10,500 psi	
Fed. 209A	Solo 1250	Rem. Fig.-8				27.0/1310	10,900 LUP	#9
Fed. 209A	SR-7625	CB 1118-12	20.0/1090	21.5/1150	22.5/1190	24.0/1250	9,200 psi	
Fed. 209A	SR-7625	Fed. 12S3	20.0/1095	21.0/1140	22.5/1195	24.0/1250	10,000 psi	
Fed. 209A	SR-7625	BP HCDP				23.0/1240	10,500 psi	#3
Fed. 209A	SR-7625	Rem. RXP12	20.5/1095	22.0/1155	23.0/1190	24.5/1250	9,400 psi	
Fed. 209A	SR-7625	WAA12	19.5/1100	20.5/1140	22.0/1205	23.0/1245	10,500 psi	
Fed. 209A	SR-7625	Windjammer	21.0/1105	22.0/1150	23.5/1205	25.0/1245	8,400 psi	
Fed. 209A	Unique	Rem. Fig.-8				23.0/1200	9,200 psi	
Fed. 209A	Unique	Rem. RXP12				22.0/1200	9,100 psi	
Fed. 209A	Universal	Fed. 12S3	21.7/1200	21.9/1215	22.2/1230	22.7/1255	11,000 psi	
Fio. 616	Clays	Fiocchi TL1	15.5/1090	16.2/1120	16.9/1230	18.4/1200	10,900 LUP	
Fio. 616	Green Dot	Rem. Fig.-8	19.0/1145	19.3/1160	19.6/1145	20.0/1200	8,700 psi	
Fio. 616	Green Dot	Rem. RXP12				22.0/1250	9,100 psi	
Fio. 616	Herco	Rem. RXP12				27.5/1310	9,300 psi	
Fio. 616	International	Fiocchi TL1	18.1/1090	18.4/1120	18.7/1145	19.9/1200	10,000 LUP	
Fio. 616	R. Scot D	Rem. Fig.-8	18.5/1145	18.9/1160	19.3/1175	20.0/1200	10,900 LUP	
Fio. 616	Red Diamond	H. Versalite	15.5/1145	16.3/1175	17.0/1200	18.5/1255	10,400 psi	#5
Fio. 616	Red Diamond	Pat. Ctrl. Red	16.0/1145	16.8/1175	17.5/1200	19.0/1255	9,700 psi	#5
Fio. 616	Red Diamond	Rem. Fig.-8	16.0/1145	16.8/1175	17.5/1200	19.0/1255	10,100 psi	#5
Fio. 616	Red Diamond	Rem. RXP12	16.0/1145	16.8/1175	17.5/1200	19.0/1255	10,500 psi	#5
Fio. 616	Red Diamond	Rem. TGT12	16.0/1145	16.8/1175	17.5/1200	19.0/1255	9,600 psi	#5
Fio. 616	Red Dot	Rem. Fig.-8	16.5/1090	17.5/1145	18.7/1175	19.5/1200	10,600 psi	
Fio. 616	Solo 1000	Rem. Fig.-8	18.0/1145	18.4/1160	18.8/1175	19.5/1200		
Fio. 616	Solo 1000	Rem. Fig.-8	18.0/1145	18.4/1160	18.8/1175	19.5/1200	10,700 LUP	#9
Fio. 616	Unique	Rem. Fig.-8				23.0/1200	8,500 psi	
Fio. 616	Unique	Rem. RXP12	23.5/1250	24.6/1270	25.3/1290	26.0/1310	9,900 psi	

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: Premier & Nitro 27 & STS Plastic Target								
Rem. 209	International	BP HCDP	18.5/1145	19.3/1200	19.7/1225	21.2/1255	10,700 LUP	#3 .
Rem. 209	Nitro-100	Fed. 12C1				18.5/1200		
Rem. 209	Nitro-100	Fed. 12S0				18.5/1200		
Rem. 209	Nitro-100	Fed. 12S3				18.5/1200		
Rem. 209	Nitro-100	H. Versalite				18.5/1200		
Rem. 209	Nitro-100	BP HCDP	17.0/1145	17.5/1160	18.5/1175	18.5/1200	9,800 psi	#3
Rem. 209	Nitro-100	Lage Uniwad				18.5/1200		
Rem. 209	Nitro-100	Rem. Fig.-8		18.5/1200	19.3/1230	20.0/1255		
Rem. 209	Nitro-100	Rem. RXP12	17.0/1145	17.8/1180	18.6/1220	19.5/1255		
Rem. 209	Red Diamond	H. Versalite	16.0/1145	16.5/1175	17.0/1200	18.5/1255	9,900 psi	#5
Rem. 209	Red Diamond	Pat. Ctrl. Red	16.5/1145	17.0/1175	17.5/1200	19.0/1255	9,100 psi	#5
Rem. 209	Red Diamond	Rem. Fig.-8	16.0/1145	16.8/1175	17.5/1200	19.0/1255	9,500 psi	#5
Rem. 209	Red Diamond	Rem. RXP12	16.0/1145	16.8/1175	17.5/1200	19.0/1255	9,800 psi	#5
Rem. 209	Red Diamond	Rem. TGT12	16.0/1145	16.8/1175	17.5/1200	19.0/1255	9,000 psi	#5
Rem. 209	Red Dot	BP HCDP	16.0/1090	16.5/1120	17.0/1145	17.5/1200	10,300 psi	#3
Rem. 209	Scot 453	Rem. Fig.-8	17.5/1125	18.0/1145	18.5/1175	19.0/1200	10,900 psi	
Rem. 209	Solo 1250	BP HCDP	24.0/1200	24.5/1220	25.0/1255	25.5/1270	9,900 psi	#3
Rem. 209	WSL	BP HCDP	18.5/1150	19.0/1180	19.5/1200	20.0/1230	9,700 psi	#3
Fio. 616	Universal	Fiocchi TL1	22.5/1200	22.7/1215	23.0/1230	23.5/1255	10,600 psi	
Rem. 209P	Alliant e3	Rem. RXP12				15.0/1090	8,655 psi	
Rem. 209P	Alliant e3	Rem. Fig. 8				15.0/1090	8,760 psi	
Rem. 209P	Alliant e3	WAA12 (white)				15.0/1090	9,175 psi	
Rem. 209P	Alliant e3	Fed. 12S3				15.2/1090	8,595 psi	
Rem. 209P	Alliant e3	Claybuster 0118				15.4/1090	8,075 psi	
Rem. 209P	Alliant e3	Claybuster 4118				15.5/1090	7,950 psi	
Rem. 209P	Alliant e3	WAA12 (white)				16.0/1145	10,170 psi	
Rem. 209P	Alliant e3	Claybuster 0118				16.2/1145	8,640 psi	
Rem. 209P	Alliant e3	Rem. RXP12				16.3/1145	9,465 psi	
Rem. 209P	Alliant e3	Claybuster 4118				16.5/1145	9,390 psi	
Rem. 209P	Alliant e3	Rem. Fig. 8				16.5/1145	9,930 psi	
Rem. 209P	Alliant e3	Fed. 12S3				16.7/1145	10,425 psi	
Rem. 209P	Alliant e3	WAA12 (white)				17.2/1200	10,960 psi	
Rem. 209P	Alliant e3	Rem. Fig. 8				17.5/1200	10,775 psi	
Rem. 209P	Alliant e3	Claybuster 0118				17.7/1200	10,575 psi	
Rem. 209P	Alliant e3	Rem. RXP12				17.9/1200	10,660 psi	
Rem. 209P	Alliant e3	Claybuster 4118				18.0/1200	10,710 psi	
Rem. 209P	Promo	Rem. Fig. 8				18.0/1145		
Rem. 209P	Promo	Windjammer				17.5/1145		
Rem. 209P	Promo	Claybuster 3118-12				17.5/1145		
Rem. 209P	Promo	Red PC				17.5/1145		
Rem. 209P	Promo	Rem. Fig. 8				19.0/1200		
Rem. 209P	Promo	Windjammer				18.5/1200		
Rem. 209P	Promo	Claybuster 3118-12				19.0/1200		
Rem. 209P	#2 Improved	Rem. Fig.-8	17.5/1125	18.0/1145	18.5/1175	19.0/1200	10,900 psi	#9
Rem. 209P	American Select	Claybuster	17.5/1090	19.0/1145	20.0/1200	21.5/1250	10,600 psi	
Rem. 209P	American Select	CS12S	18.0/1200	18.2/1215	18.6/1225	18.8/1235	11,300 psi	
Rem. 209P	American Select	Fed. 12S3	17.5/1090	18.5/1145	19.2/1175	20.0/1200	10,600 psi	
Rem. 209P	American Select	Pat. Ctrl. Red	17.5/1090	19.0/1145	19.8/1175	20.5/1200	9,700 psi	
Rem. 209P	American Select	Rem. Fig.-8	17.5/1090	19.0/1145	20.5/1200	21.5/1250	9,900 psi	
Rem. 209P	American Select	Rem. RXP12	17.0/1090	18.5/1145	20.5/1200	21.0/1250	10,500 psi	
Rem. 209P	American Select	Windjammer	18.0/1090	19.0/1145	19.8/1175	20.5/1200	9,100 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: Premier & Nitro 27 & STS Plastic Target								
Rem. 209P	American Select	WT12 Orange	17.0/1090	18.5/1145	19.2/1175	20.0/1200	10,600 psi	#8
Rem. 209P	Clays	CB 3118-12-A	15.4/1090	16.0/1145	16.6/1175	17.2/1200	11,200 psi	
Rem. 209P	Clays	CB 3118-12-AR	15.0/1090	16.2/1145	16.5/1175	16.8/1200	11,200 psi	
Rem. 209P	Clays	Fed. 12S3	16.4/1090	17.6/1145	18.2/1175	18.8/1200	9,600 LUP	
Rem. 209P	Clays	Rem. Fig.-8	16.9/1090	18.0/1145	18.6/1175	19.2/1200	9,000 LUP	
Rem. 209P	Clays	WAA12	16.6/1090	17.7/1145	18.3/1175	18.8/1200	10,300 LUP	
Rem. 209P	Green Dot	Fed. 12S3	19.0/1145	19.4/1160	19.8/1175	20.5/1200	9,700 psi	
Rem. 209P	Green Dot	Fiocchi FTW1	19.5/1145	20.0/1160	20.1/1175	20.5/1200	9,900 psi	
Rem. 209P	Green Dot	H. Versalite	19.0/1145	19.3/1160	19.6/1175	20.0/1200	8,700 psi	
Rem. 209P	Green Dot	Lage Uniwad				19.0/1145	8,000 psi	
Rem. 209P	Green Dot	Pat. Ctrl. Red	19.0/1145	19.6/1160	20.2/1175	21.0/1200	8,500 psi	
Rem. 209P	Green Dot	Rem. Fig.-8	19.0/1145	19.5/1160	20.1/1175	21.0/1200	8,800 psi	
Rem. 209P	Green Dot	Rem. RXP12	19.0/1145	19.4/1160	19.8/1175	20.5/1200	8,700 psi	
Rem. 209P	Green Dot	WAA12	19.0/1145	19.5/1160	20.1/1175	21.0/1200	8,900 psi	
Rem. 209P	Green Dot	Windjammer	19.5/1145	20.0/1160	20.1/1175	20.5/1200	8,200 psi	
Rem. 209P	Green Dot	WT12 Orange	19.5/1145	20.0/1160	20.6/1175	21.5/1200	8,700 psi	#8
Rem. 209P	Herco	H. Versalite				27.0/1310	8,800 psi	
Rem. 209P	Herco	Rem. RXP12				27.5/1310	8,400 psi	
Rem. 209P	Herco	WAA12				27.0/1310	8,800 psi	
Rem. 209P	Herco	Windjammer				28.5/1310	8,600 psi	
Rem. 209P	IMR 700-X	CB 1118-12	15.5/1110	16.5/1155	17.5/1195	19.0/1250	11,100 psi	
Rem. 209P	IMR 700-X	Fed. 12S3	15.0/1095	15.8/1125	16.5/1150	17.5/1195	11,100 psi	
Rem. 209P	IMR 700-X	BP HCDP				17.0/1190	9,800 psi	#3
Rem. 209P	IMR 700-X	Rem. Fig.-8	15.5/1095	16.5/1140	18.0/1205	19.0/1250	11,300 psi	
Rem. 209P	IMR 700-X	WAA12	15.0/1090	16.0/1140	16.8/1175	17.5/1205	11,200 psi	
Rem. 209P	IMR 700-X	Windjammer	15.5/1090	16.5/1135	18.0/1200	19.0/1245	10,500 psi	
Rem. 209P	IMR PB	CB 1118-12	19.5/1090	21.0/1150	22.5/1200	24.0/1250	8,600 psi	
Rem. 209P	IMR PB	Fed. 12S4	19.0/1100	20.0/1140	21.5/1195	23.0/1245	10,000 psi	
Rem. 209P	IMR PB	BP HCDP				23.0/1240	9,900 psi	#3
Rem. 209P	IMR PB	Rem. Fig.-8	20.0/1100	21.5/1150	23.0/1205	24.5/1260	9,300 psi	
Rem. 209P	IMR PB	WAA12	19.5/1105	20.5/1145	22.0/1200	23.5/1255	9,500 psi	
Rem. 209P	IMR PB	Windjammer	20.0/1100	21.0/1140	22.5/1205	24.0/1265	8,900 psi	
Rem. 209P	International	CB 3118-12-A	16.8/1090	18.0/1145	19.0/1200	21.0/1255	10,200 psi	
Rem. 209P	International	CB 3118-12-AR	18.0/1090	18.2/1145	19.0/1200	21.0/1255	10,400 psi	
Rem. 209P	International	Fed. 12S3	17.6/1090	18.3/1145	19.4/1200	20.6/1255	10,200 LUP	
Rem. 209P	International	Rem. Fig.-8	18.6/1090	19.6/1145	20.9/1200	21.7/1255	9,100 LUP	
Rem. 209P	International	WAA12	18.3/1090	18.8/1145	19.7/1200	20.9/1255	10,400 LUP	
Rem. 209P	Nitro-100	H. Versalite				17.0/1200	9,800 psi	#9
Rem. 209P	Nitro-100	Rem. Fig.-8	16.0/1145	16.2/1160	16.5/1175	17.0/1200	8,600 psi	#9
Rem. 209P	Nitro-100	Rem. RXP12	15.5/1145	15.7/1160	16.0/1175	16.5/1200	10,100 psi	#9
Rem. 209P	Nitro-100	Rem. TGT12	16.0/1145	16.2/1160	16.5/1175	17.0/1200	10,400 psi	#9
Rem. 209P	Nitro-100	Windjammer				17.0/1200	8,800 psi	#9
Rem. 209P	R. Scot D	Claybuster	17.5/1125	18.5/1145	19.3/1175	20.0/1200	9,600 LUP	
Rem. 209P	R. Scot D	H. Versalite	17.5/1125	18.0/1145	19.2/1175	20.0/1200	10,900 LUP	
Rem. 209P	R. Scot D	Lage Uniwad	18.0/1125	18.5/1130	18.8/1140	19.0/1145	10,200 LUP	
Rem. 209P	R. Scot D	Pat. Ctrl. Red	18.0/1125	18.5/1145	20.5/1200	21.0/1255	10,900 LUP	
Rem. 209P	R. Scot D	Rem. Fig.-8	18.0/1125	18.5/1145	19.3/1175	20.0/1200	10,600 LUP	
Rem. 209P	R. Scot D	Rem. RXP12	18.0/1125	18.5/1145	20.5/1200	21.0/1255	10,900 LUP	
Rem. 209P	R. Scot D	Rem. TGT12	17.0*/1125	18.5/1145	19.3/1175	20.0/1200	10,400 LUP	#10
Rem. 209P	R. Scot D	WAA12	18.0/1125	18.5/1145	19.3/1175	20.0/1200	10,800 LUP	
Rem. 209P	R. Scot D	Windjammer	18.0/1125	18.5/1145	20.0/1200	21.0/1255	10,900 LUP	
Rem. 209P	Red Dot	Fed. 12S3	16.0/1090	16.8/1115	17.4/1130	18.0/1145	10,100 psi	
Rem. 209P	Red Dot	Fiocchi FTW1	16.5/1090	17.5/1145	18.1/1175	18.5/1200	10,700 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: Premier & Nitro 27 & STS Plastic Target								
Rem. 209P	Red Dot	H. Versalite				17.5/1145	9,000 psi	
Rem. 209P	Red Dot	Lage Uniwad				17.5/1145	9,900 psi	
Rem. 209P	Red Dot	Pat. Ctrl. Red	16.5/1090	17.5/1145	18.1/1175	19.5/1200	10,100 psi	
Rem. 209P	Red Dot	Rem. Fig.-8	16.5/1090	18.0/1145	18.6/1175	19.0/1200	10,100 psi	
Rem. 209P	Red Dot	Rem. RXP12	16.0/1090	17.5/1145	18.3/1175	19.0/1200	10,000 psi	
Rem. 209P	Red Dot	WAA12	16.0/1090	16.4/1115	16.7/1130	17.0/1145	10,100 psi	
Rem. 209P	Red Dot	Windjammer	16.5/1090	17.5/1145	18.1/1175	18.5/1200	9,400 psi	
Rem. 209P	Red Dot	WT12 Orange	18.5/1145	18.8/1160	19.1/1175	19.5/1200	10,700 psi	#8
Rem. 209P	Solo 1000	Claybuster	17.5/1125	18.0/1145	18.8/1175	19.5/1200	9,500 LUP	#9
Rem. 209P	Solo 1000	H. Versalite	17.0/1125	17.5/1145	18.7/1175	19.5/1200	10,200 LUP	#9
Rem. 209P	Solo 1000	Lage Uniwad				17.5/1125	7,500 LUP	#9
Rem. 209P	Solo 1000	Pat. Ctrl. Red	17.5/1125	18.0/1145	20.0/1200	20.5/1255	10,400 LUP	#9
Rem. 209P	Solo 1000	Rem. Fig.-8	17.5/1125	18.0/1145	18.8/1175	19.5/1200	9,600 LUP	#9
Rem. 209P	Solo 1000	Rem. RXP12	17.5/1125	18.0/1145	20.0/1200	20.5/1255	10,700 LUP	#9
Rem. 209P	Solo 1000	Rem. TGT12	16.5*/1125	18.0/1145	18.8/1175	19.5/1200	9,200 LUP	#9 + #10
Rem. 209P	Solo 1000	WAA12	17.5/1125	18.0/1145	18.8/1175	19.5/1200	10,200 LUP	#9
Rem. 209P	Solo 1000	Windjammer	17.5/1125	18.0/1145	19.5/1200	20.5/1255	10,400 LUP	#9
Rem. 209P	Solo 1250	Claybuster	24.5/1200	25.5/1235	26.6/1280	27.5/1310	10,500 LUP	#9
Rem. 209P	Solo 1250	H. Versalite				24.0/1200	8,800 LUP	#9
Rem. 209P	Solo 1250	Rem. Fig.-8	24.5/1200	25.5/1235	26.6/1280	27.5/1310	10,900 LUP	#9
Rem. 209P	Solo 1250	Rem. RXP12	24.5/1200	25.0/1230	25.5/1255	27.5/1310	10,800 LUP	#9
Rem. 209P	Solo 1250	WAA12	24.0/1200	24.6/1230	25.0/1255	27.5/1310	10,600 LUP	
Rem. 209P	Solo 1250	WAA12F114				27.5/1310	10,600 LUP	#9
Rem. 209P	Solo 1250	Windjammer	24.5/1200	25.3/1230	26.0/1255	27.5/1310	10,400 LUP	#9
Rem. 209P	SR-7625	CB 1118-12	20.5/1095	22.0/1155	23.0/1195	24.5/1250	8,800 psi	
Rem. 209P	SR-7625	Fed. 12S3	21.0/1110	22.0/1150	23.5/1210	24.5/1250	9,500 psi	
Rem. 209P	SR-7625	BP HCDP				24.5/1250	9,500 psi	#3
Rem. 209P	SR-7625	Rem. RXP12	21.0/1095	22.5/1150	24.0/1205	25.5/1250	9,000 psi	
Rem. 209P	SR-7625	WAA12	20.0/1090	21.5/1150	23.0/1200	24.5/1250	9,400 psi	
Rem. 209P	SR-7625	Windjammer	21.5/1095	23.0/1150	24.0/1195	25.5/1250	8,400 psi	
Rem. 209P	Unique	Fed. 12S3				22.0/1200	9,100 psi	
Rem. 209P	Unique	H. Versalite	22.0/1200	22.0/1200	22.0/1200	25.5/1310	9,900 psi	
Rem. 209P	Unique	Pat. Ctrl. Red				22.5/1200	7,800 psi	
Rem. 209P	Unique	Rem. Fig.-8				22.5/1200	8,200 psi	
Rem. 209P	Unique	Rem. RXP12	22.5/1200	22.5/1200	22.5/1200	24.5/1310	9,700 psi	
Rem. 209P	Unique	WAA12	22.0/1200	22.0/1200	22.0/1200	25.0/1310	10,500 psi	
Rem. 209P	Unique	Windjammer	23.5/1200	23.5/1200	23.5/1200	26.5/1310	8,600 psi	
Rem. 209P	Unique	WT12 Orange				23.5/1200	8,300 psi	#8
Win. 209	American Select	Rem. Fig.-8	18.5/1145	18.8/1160	19.2/1175	20.0/1200	10,200 psi	
Win. 209	Clays	H. Versalite	15.8/1090	17.2/1145	17.9/1175	18.6/1200	10,500 LUP	
Win. 209	Clays	BP HCDP	16.5/1090	17.0/1125	17.5/1145	18.0/1180	9,600 LUP	#3
Win. 209	Clays	Windjam. II	15.5/1090	16.3/1145	16.9/1175	17.5/1200	11,200 psi	
Win. 209	Green Dot	Rem. Fig.-8	19.0/1145	19.3/1160	19.6/1175	20.0/1200	8,600 psi	
Win. 209	Green Dot	Rem. RXP12				22.0/1250	9,400 psi	
Win. 209	Herco	Rem. RXP12				27.0/1310	9,500 psi	
Win. 209	IMR 700-X	CB 1118-12	15.5/1095	16.5/1145	17.5/1190	19.0/1250	11,400 psi	
Win. 209	IMR 700-X	Fed. 12S3	15.5/1100	16.0/1125	16.5/1145	17.5/1190	10,900 psi	
Win. 209	IMR 700-X	BP HCDP				17.0/1190	10,800 psi	#3
Win. 209	IMR 700-X	Rem. Fig.-8	15.5/1095	16.5/1140	17.3/1175	18.0/1205	10,800 psi	
Win. 209	IMR 700-X	WAA12	15.5/1105	16.5/1145	17.0/1170	17.5/1190	11,200 psi	
Win. 209	IMR 700-X	Windjammer	15.5/1100	16.5/1150	17.5/1190	19.0/1255	11,100 psi	
Win. 209	IMR 800-X	CB 1118-12	19.5/1100	20.5/1145	21.5/1190	23.0/1250	8,700 psi	
Win. 209	IMR 800-X	Fed. 12S3	19.0/1090	20.0/1135	21.5/1205	23.0/1260	9,600 psi	

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: Premier & Nitro 27 & STS Plastic Target								
Win. 209	IMR 800-X	BP HCDP	22.0/1200	22.2/1210	22.2/1215	22.5/1225	8,800 psi	#3
Win. 209	IMR 800-X	Rem. Fig.-8	19.5/1095	20.5/1140	22.0/1205	23.5/1265	8,900 psi	
Win. 209	IMR 800-X	WAA12	19.0/1090	20.0/1140	21.0/1190	22.5/1250	9,600 psi	
Win. 209	IMR 800-X	Windjammer	20.0/1095	21.0/1145	22.0/1190	23.5/1250	8,400 psi	
Win. 209	IMR PB	CB 1118-12	20.0/1100	21.0/1140	22.5/1200	24.0/1255	8,800 psi	
Win. 209	IMR PB	Fed. 12S4	19.0/1095	20.5/1155	21.5/1190	23.5/1260	10,400 psi	
Win. 209	IMR PB	BP HCDP				23.5/1260	10,500 psi	#3

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: Premier & Nitro 27 & STS Plastic Target								
Win. 209	IMR PB	Rem. Fig.-8	19.5/1095	21.0/1155	22.0/1190	23.5/1250	9,300 psi	
Win. 209	IMR PB	WAA12	19.0/1100	20.0/1140	22.0/1205	23.5/1255	10,200 psi	
Win. 209	IMR PB	Windjammer	20.0/1105	21.0/1145	22.5/1205	24.0/1260	9,100 psi	
Win. 209	International	H. Versalite	17.8/1090	18.4/1145	19.5/1200	20.6/1255	10,400 LUP	
Win. 209	International	BP HCDP	18.5/1120	19.0/1160	19.5/1200	20.0/1220	9,200 LUP	#3
Win. 209	International	Windjam. II	17.5/1090	18.0/1145	18.8/1175	19.5/1200	9,500 psi	
Win. 209	Nitro-100	Rem. Fig.-8				15.5/1145	8,500 psi	#9
Win. 209	Nitro-100	Rem. RXP12	15.5/1145	15.7/1160	16.0/1175	16.5/1200	10,000 psi	#9
Win. 209	Nitro-100	Rem. TGT12	16.0/1145	16.1/1130	16.3/1175	16.5/1200	10,200 psi	#9
Win. 209	R. Scot D	Rem. Fig.-8	18.5/1125	19.0/1145	19.8/1175	20.5/1200	10,200 LUP	
Win. 209	R. Scot D	Rem. RXP12	18.5/1125	18.5/1145	19.3/1175	20.0/1200	10,700 LUP	
Win. 209	R. Scot D	Rem. TGT12	18.5/1125	19.0/1145	19.5/1175	20.0/1200	10,800 LUP	
Win. 209	Red Diamond	H. Versalite	15.5/1145	17.0/1200	17.8/1230	18.5/1255	10,300 psi	#5
Win. 209	Red Diamond	Pat. Ctrl. Red	16.0/1145	17.5/1200	18.3/1230	19.0/1255	9,800 psi	#5
Win. 209	Red Diamond	Rem. Fig.-8	16.0/1145	16.8/1175	17.5/1200	19.0/1255	9,700 psi	#5
Win. 209	Red Diamond	Rem. RXP12	16.0/1145	16.8/1175	17.5/1200	19.0/1255	10,400 psi	#5
Win. 209	Red Diamond	Rem. TGT12	16.0/1145	16.8/1175	17.5/1200	19.0/1255	9,500 psi	#5
Win. 209	Red Dot	Rem. Fig.-8	16.5/1090	18.0/1145	18.6/1175	19.0/1200	10,400 psi	
Win. 209	Solo 1000	BP HCDP	18.5/1145	19.0/1160	19.5/1180	20.0/1200	9,400 psi	#3
Win. 209	Solo 1000	Rem. Fig.-8	18.0/1125	18.5/1145	19.3/1175	20.0/1200	9,400 LUP	#9
Win. 209	Solo 1000	Rem. RXP12	18.0/1125	18.5/1145	19.0/1175	19.5/1200	9,500 LUP	#9
Win. 209	Solo 1000	Rem. TGT12	18.0/1125	18.5/1145	19.0/1175	19.5/1200	10,300 LUP	#9
Win. 209	Solo 1250	Rem. Fig.-8	24.5/1200	25.3/1235	26.2/1280	27.0/1310	10,900 LUP	#9
Win. 209	SR-7625	CB 1118-12	21.0/1090	22.5/1155	23.0/1200	24.5/1245	8,600 psi	
Win. 209	SR-7625	Fed. 12S3	20.5/1090	22.0/1145	23.5/1205	24.5/1255	9,600 psi	
Win. 209	SR-7625	Rem. RXP12	21.0/1090	22.5/1155	23.5/1195	25.0/1250	8,800 psi	
Win. 209	SR-7625	WAA12	20.5/1090	22.0/1155	23.0/1195	24.5/1250	9,500 psi	
Win. 209	SR-7625	Windjammer	21.5/1095	22.5/1140	24.0/1205	25.0/1250	8,500 psi	
Win. 209	Unique	Rem. Fig.-8	24.5/1250	24.5/1250	24.5/1250	22.5/1200	8,400 psi	
Win. 209	Unique	Rem. RXP12	22.5/1200	23.1/1230	23.7/1255	26.0/1310	9,800 psi	
Win. 209	Universal	Rem. Fig.-8	21.5/1200	21.9/1215	22.3/1230	25.0/1310	10,800 psi	
Win. 209	Universal	WAA12	28.0/1365	28.3/1375	28.7/1390	23.0/1255	10,700 psi	
Win. 209	WSF	Fed. 12S3	27.0/1310	27.5/1325	28.0/1345	29.0/1400	9,500 psi	
Win. 209	WSF	BP HCDP	27.0/1300	27.5/1320	28.0/1345	28.5/1365	10,700 psi	#3
Win. 209	WSF	WAA12				28.5/1365	10,700 psi	
Win. 209	WSL	Fed. 12S3				19.5/1200	10,200 psi	
Win. 209	WSL	Rem. Fig.-8	19.5/1200	19.8/1220	20.2/1235	20.5/1255	10,700 psi	
Win. 209	WSL	Rem. RXP12	19.5/1200	19.8/1220	20.2/1235	20.5/1255	10,500 psi	
Win. 209	WSL	WAA12	18.5/1145	18.8/1165	19.2/1180	19.5/1200	9,700 psi	
Win. 209	WSL	WAA12				20.5/1255	10,900 psi	
Win. 209	WSL	WAA12SL	19.5/1200	19.8/1220	20.2/1235	20.5/1255	10,600 psi	
Win. 209	WST	Rem. Fig.-8				19.0/1145	10,400 psi	
Win. 209	WST	Rem. RXP12				19.0/1145	10,500 psi	
Win. AATP	Clays	H. Versalite	15.5/1090	15.7/1100	16.0/1120	16.4/1145	10,400 psi	
Win. AATP	International	H. Versalite	17.2/1090	17.8/1145	18.4/1175	19.0/1200	10,200 psi	
Remington: RXP								
CCI 109	W 473AA	Fed. 12S1				23.0/1200	8,700 LUP	
CCI 109	W 473AA	Rem. RXP12				23.5/1200	8,300 LUP	
CCI 109	W 473AA	WAA12				23.0/1200	9,000 LUP	
CCI 109	W 473AA	WAA12XW				23.0/1200	9,600 LUP	
Rem. 209	IMR 700-X	BP HCDP	17.0/1140	17.5/1170	17.7/1185	18.0/1200	9,900 psi	#3
Rem. 209	International	BP HCDP	18.5/1200	19.0/1230	19.4/1255	20.1/1290	8,600 LUP	#3

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: RXP								
Rem. 209	Solo 1250	BP HCDP	24.5/1200	25.5/1250	26.5/1280	27.0/1300	10,200 psi	#3
Rem. 209P	IMR 800-X	BP HCDP	21.5/1160	22.5/1200	23.5/1230	24.0/1250	7,700 LUP	#3
Win. 209	W 452AA	Fed. 12S1				19.5/1145	9,900 LUP	
Win. 209	W 452AA	Rem. RXP12	19.5/1145	20.0/1165	20.5/1180	21.0/1200	10,400 LUP	
Win. 209	W 452AA	WAA12	19.5/1145	20.0/1165	20.5/1180	21.0/1200	10,800 LUP	
Win. 209	W 452AA	WAA12XW				19.5/1145	10,000 LUP	
Win. 209	W 473AA	Fed. 12S1				23.5/1200	8,500 LUP	
Win. 209	W 473AA	Rem. RXP12	24.0/1200	24.5/1220	25.0/1235	25.5/1255	9,700 LUP	
Win. 209	W 473AA	Rem. RXP12				27.5/1330	10,500 LUP	
Win. 209	W 473AA	WAA12	23.5/1200	24.8/1245	26.2/1285	27.5/1330	9,900 LUP	
Win. 209	W 473AA	WAA12				25.0/1255	9,600 LUP	
Win. 209	W 473AA	WAA12XW				23.5/1200	8,600 LUP	
Win. 209	W 540	Rem. RXP12				33.0/1255	8,500 LUP	
Remington: Unibody (Integral Plastic Base Wad)								
CCI 157	W 452AA	Fed. 12S1	19.5/1145	20.0/1165	20.5/1180	21.0/1200	10,400 LUP	
CCI 157	W 452AA	Rem. R12H	19.5/1145	20.2/1165	20.8/1180	21.5/1200	10,300 LUP	
CCI 157	W 452AA	WAA12	19.5/1145	20.2/1165	20.8/1180	21.5/1200	10,200 LUP	
CCI 157	W 452AA	Rem. R12H	24.5/1200	26.0/1255	27.3/1295	28.5/1330	9,400 LUP	
CCI 209	Green Dot	Rem. RXP12	18.5/1145	19.9/1175	21.0/1200	22.5/1255	10,500 psi	
CCI 209	Herco	Rem. R12H				27.0/1310	9,300 psi	
CCI 209	IMR PB	Fed. 12S4				23.0/1240	9,000 psi	
CCI 209	IMR PB	Rem. R12H				24.5/1260	8,100 psi	
CCI 209	IMR PB	Rem. RXP12	21.0/1145	21.5/1160	21.8/1170	22.5/1195	7,500 psi	
CCI 209	Red Dot	Rem. RXP12				18.0/1145	10,100 psi	
CCI 209	Unique	Rem. R12H				25.5/1310	9,600 psi	
CCI 209	Unique	Rem. RXP12				23.0/1200	8,300 psi	
CCI 209M	Green Dot	Rem. RXP12	18.5/1145	19.3/1175	20.0/1200	21.0/1255	10,100 psi	
CCI 209M	Herco	Rem. R12H				26.5/1310	10,300 psi	
CCI 209M	IMR 800-X	Lage Uniwad	24.0/1250	24.8/1280	25.5/1305	28.5/1405	10,400 psi	
CCI 209M	Red Dot	Rem. RXP12				17.0/1145	10,200 psi	
CCI 209M	Unique	Rem. R12H				25.0/1310	10,700 psi	
CCI 209M	Unique	Rem. RXP12				22.0/1200	8,800 psi	
Fed. 209	Green Dot	Rem. RXP12	18.0/1145	18.6/1175	20.0/1200	20.5/1255	10,200 psi	
Fed. 209	Herco	Rem. R12H				25.5/1310	10,700 psi	
Fed. 209	Red Dot	Rem. RXP12				18.0/1200	10,100 psi	
Fed. 209	Red Dot	Rem. RXP12				17.5/1145	10,500 psi	
Fed. 209	SR-7625	Fed. 12S4				22.5/1195	8,200 psi	
Fed. 209	SR-7625	Rem. R12H				25.5/1250	7,900 psi	
Fed. 209	SR-7625	WAA12				23.5/1205	8,000 psi	
Fed. 209	Unique	Rem. RXP12	22.0/1200	22.3/1215	22.6/1230	23.0/1255	10,000 psi	
Rem. 209	Green Dot	Fed. 12S3				19.0/1145	9,200 psi	
Rem. 209	Green Dot	H. Versalite	18.0/1145	18.3/1160	18.6/1175	19.0/1200	9,900 psi	
Rem. 209	Green Dot	Rem. R12H	19.0/1145	19.3/1175	19.5/1200	21.0/1255	10,400 psi	
Rem. 209	Green Dot	Rem. RXP12	19.0/1145	19.6/1175	20.0/1200	20.5/1255	10,300 psi	
Rem. 209	Green Dot	WAA12	17.5/1145	18.0/1160	18.6/1175	19.5/1200	10,000 psi	
Rem. 209	Green Dot	Windjammer				20.5/1200	8,300 psi	
Rem. 209	Herco	Rem. R12H				25.5/1310	10,100 psi	
Rem. 209	Herco	Rem. RXP12				25.5/1310	10,200 psi	
Rem. 209	Herco	WAA12				24.5/1310	10,200 psi	
Rem. 209	Red Dot	Fed. 12S3				17.0/1145	10,100 psi	
Rem. 209	Red Dot	H. Versalite	17.0/1145	17.3/1160	17.6/1175	18.0/1200	10,000 psi	
Rem. 209	Red Dot	Rem. R12H	17.5/1145	17.7/1165	17.8/1175	18.0/1200	10,000 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: Unibody (Integral Plastic Base Wad)								
Rem. 209	Red Dot	Rem. RXP12				18.0/1200	10,500 psi	
Rem. 209	Red Dot	WAA12				17.0/1145	10,200 psi	
Rem. 209	Red Dot	Windjammer				18.5/1200	9,600 psi	
Rem. 209	Unique	Fed. 12S3	21.5/1200	21.8/1215	22.1/1230	22.5/1255	9,800 psi	
Rem. 209	Unique	H. Versalite	21.0/1200	21.6/1215	22.2/1230	23.0/1255	8,800 psi	
Rem. 209	Unique	Rem. R12H	21.5/1200	22.5/1255	23.6/1285	24.5/1310	10,100 psi	
Rem. 209	Unique	Rem. RXP12	22.0/1200	22.5/1255	23.3/1285	24.0/1310	10,000 psi	
Rem. 209	Unique	WAA12	21.5/1200	21.8/1215	22.1/1230	22.5/1255	9,200 psi	
Rem. 209	Unique	WAA12				24.0/1310	10,300 psi	
Rem. 209	Unique	Windjammer	21.0/1200	21.6/1215	22.2/1230	23.0/1255	9,700 psi	
Rem. 209P	IMR 700-X	Rem. Fig.-8				16.0/1145	10,000 psi	
Rem. 209P	IMR 700-X	Rem. RXP12				17.5/1140	10,000 psi	
Rem. 209P	IMR 800-X	Rem. Fig.-8	24.5/1200	25.8/1250	27.0/1300	30.0/1400	10,400 psi	
Rem. 97*	Green Dot	Rem. R12H				21.0/1255	10,100 psi	
Rem. 97*	Green Dot	Rem. RXP12				21.0/1255	10,600 psi	
Win. 209	Green Dot	Rem. RXP12	18.5/1145	19.7/1175	20.5/1200	21.5/1255	10,700 psi	
Win. 209	Herco	Rem. R12H				26.5/1310	10,700 psi	
Win. 209	Red Dot	Rem. RXP12				17.0/1145	10,500 psi	
Win. 209	Unique	Rem. R12H				25.0/1310	10,700 psi	
Win. 209	Unique	Rem. RXP12	22.0/1200	22.4/1215	22.8/1230	23.5/1255	9,800 psi	
Winchester: Compresion-Formed AA Type								
CCI 109	Green Dot	WAA12	18.0/1145	18.0/1145	18.6/1175	19.0/1200	9,300 psi	
CCI 109	Red Dot	WAA12	17.0/1145	17.3/1160	17.6/1175	18.0/1200	10,400 psi	
CCI 109	W 452AA	Fed. 12C1	19.5/1145	19.8/1165	20.2/1180	20.5/1200	10,400 LUP	
CCI 109	W 452AA	Fed. 12S1	19.5/1145	19.8/1165	20.2/1180	20.5/1200	10,400 LUP	
CCI 109	W 452AA	Rem. RXP12				19.0/1145	9,600 LUP	
CCI 109	W 452AA	Rem. RXP12				20.5/1200	10,400 LUP	
CCI 109	W 452AA	WAA12				19.0/1145	9,600 LUP	
CCI 109	W 452AA	WAA12				20.5/1200	10,500 LUP	
CCI 109	W 473AA	Fed. 12C1				24.0/1200	8,500 LUP	
CCI 109	W 473AA	Fed. 12S1	23.5/1200	25.0/1255	26.0/1295	27.0/1330	10,500 LUP	
CCI 109	W 473AA	Rem. RXP12	23.5/1200	25.0/1255	26.0/1295	27.0/1330	10,100 LUP	
CCI 109	W 473AA	WAA12	23.5/1200	24.5/1255	25.8/1295	27.0/1330	10,400 LUP	
CCI 209	Clays	Fed. 12S3	16.2/1090	17.6/1145	18.3/1175	19.0/1200	10,100 LUP	
CCI 209	IMR 800-X	CB 1118-12	21.0/1095	22.5/1150	24.0/1200	25.5/1250	6,700 psi	
CCI 209	IMR 800-X	CS12S				22.3/1200	6,800 psi	
CCI 209	IMR 800-X	Fed. 12S3	20.5/1090	22.0/1150	23.0/1190	24.5/1255	7,800 psi	
CCI 209	IMR 800-X	BP HCDP				23.0/1200	6,800 psi	#3
CCI 209	IMR 800-X	Rem. Fig.-8	21.0/1095	22.0/1135	23.5/1195	25.5/1260	6,900 psi	
CCI 209	IMR 800-X	WAA12	20.5/1095	22.0/1155	23.0/1195	24.5/1250	7,700 psi	
CCI 209	IMR 800-X	Windjammer	21.5/1100	22.5/1150	24.0/1195	26.0/1260	6,200 psi	
CCI 209	International	Fed. 12S3	19.2/1145	19.6/1175	20.0/1200	21.6/1255	10,200 LUP	
CCI 209	Nitro-100	CB 1118-12	15.5/1125	16.0/1145	16.5/1175	17.0/1200	9,600 psi	#9
CCI 209	Nitro-100	H. Versalite				17.0/1145		
CCI 209	Nitro-100	WAA12	15.5/1125	16.0/1145	16.5/1175	17.0/1200	10,000 psi	#9
CCI 209	R. Scot D	Claybuster	18.5/1125	19.0/1145	20.5/1200	21.5/1255	10,600 LUP	
CCI 209	R. Scot D	WAA12	18.5/1125	19.0/1145	19.8/1175	20.5/1200	10,300 LUP	
CCI 209	Red Diamond	BP CS12	17.0/1145	17.5/1175	18.0/1200	19.5/1255	10,600 psi	#5
CCI 209	Red Diamond	H. Versalite	17.0/1145	18.5/1200	18.8/1230	19.0/1255	10,300 psi	#5
CCI 209	Red Diamond	Hawk Original	17.0/1145	17.5/1175	18.0/1200	19.0/1255	9,000 psi	#5

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compresion-Formed AA Type								
CCI 209	Red Diamond	WAA12	17.0/1145	17.1/1160	17.3/1175	17.5/1200	8,300 psi	#5
CCI 209	Solo 1000	CB 1118-12	17.0/1125	17.5/1145	18.5/1200	20.0/1255	10,300 psi	#5
CCI 209	Solo 1000	Claybuster	18.0/1125	18.5/1145	20.0/1200	21.0/1255		
CCI 209	Solo 1000	WAA12	16.5/1125	17.0/1145	17.5/1175	18.0/1200	10,500 psi	#9
CCI 209	Solo 1250	WAA12	24.0/1200	25.1/1235	26.2/1280	27.0/1310	10,200 LUP	#9
CCI 209	Universal	Windjammer	23.3/1200	23.5/1215	23.8/1230	24.3/1255	9,300 psi	
CCI 209	WSL	Fed. 12S3				19.5/1200	10,400 psi	
CCI 209	WSL	Rem. Fig.-8				18.5/1145	8,500 psi	
CCI 209	WSL	Rem. Fig.-8				21.0/1255	10,900 psi	
CCI 209	WSL	Rem. Fig.-8				19.5/1200	9,700 psi	
CCI 209	WSL	Rem. R12L	19.5/1200	20.0/1220	20.5/1235	21.0/1255	10,600 psi	
CCI 209	WSL	Rem. RXP12				21.0/1255	10,700 psi	
CCI 209	WSL	WAA12				19.5/1200	10,800 psi	
CCI 209	WSL	WAA12SL	18.5/1145	18.9/1170	19.5/1200	21.0/1255	10,900 psi	
CCI 209	WST	Fed. 12S3	19.0/1145	19.5/1165	20.0/1180	20.5/1200	10,800 psi	
CCI 209	WST	Rem. Fig.-8	19.0/1145	19.5/1165	20.0/1180	20.5/1200	10,000 psi	
CCI 209	WST	Rem. RXP12	19.5/1145	19.8/1165	20.2/1180	20.5/1200	10,300 psi	
CCI 209	WST	WAA12	19.0/1145	19.5/1165	20.0/1180	20.5/1200	10,300 psi	
CCI 209	Green Dot	WAA12	18.5/1145	18.5/1145	19.3/1175	20.0/1200	10,400 psi	
CCI 209M	Nitro-100	WAA12	15.5/1125	16.0/1145	16.5/1175	17.0/1200	10,800 psi	#9
CCI 209M	R. Scot D	WAA12	17.5/1125	18.0/1145	18.5/1175	19.0/1200	10,000 LUP	
CCI 209M	Red Diamond	BP CS12	16.5/1145	17.0/1175	17.5/1200	18.5/1255	10,300 psi	#5
CCI 209M	Red Diamond	H. Versalite	16.5/1145	17.3/1175	18.0/1200	19.0/1255	10,600 psi	#5
CCI 209M	Red Diamond	Hawk Original	16.5/1145	17.0/1175	17.5/1200	19.0/1255	10,000 psi	#5
CCI 209M	Red Diamond	Lage Uniwad				19.0/1255	9,600 psi	#5
CCI 209M	Red Diamond	WAA12	16.0/1145	16.4/1160	16.8/1175	17.5/1200	8,800 psi	#5
CCI 209M	Red Dot	WAA12	17.0/1090	17.5/1145	18.1/1175	18.5/1200	10,500 psi	
CCI 209M	Solo 1000	WAA12	16.0/1125	17.0/1145	17.5/1175	18.0/1200	9,800 psi	#9
CCI 209M	Solo 1000	WAA12	17.0/1125	17.5/1145	18.0/1175	18.5/1200		
CCI 209M	Solo 1250	WAA12				23.0/1200	8,700 LUP	#9
CCI 209M	Unique	WAA12	21.5/1200	21.5/1200	21.5/1200	25.5/1310	9,700 psi	
CCI 209M	Universal	H. Versalite	22.0/1200	22.2/1215	22.5/1230	23.0/1255	10,700 psi	
CCI 209SC	American Select	WAA12	17.0/1090	18.5/1145	19.1/1175	19.5/1200	10,100 psi	
CCI 209SC	Green Dot	Rem. Fig.-8	20.5/1145	21.0/1165	21.6/1185	22.0/1200	10,400 psi	
CCI 209SC	Green Dot	WAA12	19.5/1145	19.5/1145	20.1/1175	20.5/1200	10,700 psi	
CCI 209SC	Green Dot	Windjammer	20.5/1145	21.0/1165	21.6/1185	22.0/1200	10,200 psi	
CCI 209SC	International	Fed. 12S3	18.5/1145	19.5/1200	20.0/1230	20.3/1255	11,200 psi	
CCI 209SC	Red Dot	Rem. Fig.-8	18.0/1145	18.1/1160	18.3/1175	18.5/1200	10,400 psi	
CCI 209SC	Red Dot	WAA12				17.5/1145	10,600 psi	
CCI 209SC	Red Dot	Windjammer				18.0/1145	9,900 psi	
CCI 209SC	Universal	H. Versalite	22.3/1200	22.6/1215	22.9/1230	23.5/1255	9,400 psi	
CCI 209SC	Universal	Windjammer	22.4/1200	23.2/1230	24.0/1255	24.4/1310	9,800 psi	
Fed. 209	Clays	Windjammer	17.2/1090	18.4/1145	19.0/1175	19.6/1200	8,200 LUP	
Fed. 209	International	Windjammer	18.6/1090	19.7/1145	21.1/1200	22.1/1255	8,200 LUP	
Fed. 209	Nitro-100	H. Versalite				16.5/1145		
Fed. 209	Nitro-100	WAA12	17.0/1145	17.3/1160	17.6/1175	18.0/1200		
Fed. 209	R. Scot D	WAA12	18.0/1125	18.5/1145	19.0/1175	19.5/1200	10,800 LUP	
Fed. 209	Red Dot	WAA12				16.0/1090	9,900 psi	
Fed. 209	Solo 1000	WAA12	17.5/1125	18.0/1145	18.5/1175	19.0/1200		
Fed. 209	Solo 1250	WAA12	24.0/1200	24.2/1215	24.5/1230	25.0/1255	9,800 LUP	
Fed. 209	Solo 1250	WAA12F114				25.5/1255	9,400 LUP	
Fed. 209	Unique	WAA12	24.0/1250	24.0/1250	24.0/1250	24.5/1310	10,600 psi	
Fed. 209	Universal	Fed. 12S3	22.7/1200			23.8/1255	10,000 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compresion-Formed AA Type								
Fed. 209	W 452AA	Fed. 12C1	20.0/1145			21.0/1200	9,900 LUP	
Fed. 209	W 452AA	Fed. 12S1	19.5/1145			20.5/1200	9,900 LUP	
Fed. 209	W 452AA	Rem. RXP12				19.5/1145	8,700 LUP	
Fed. 209	W 452AA	WAA12	19.5/1145	19.8/1165	20.2/1180	20.5/1200	10,000 LUP	
Fed. 209	W 473AA	Fed. 12C1				23.5/1200	8,700 LUP	
Fed. 209	W 473AA	Fed. 12S1	23.5/1200	24.0/1220	24.5/1235	25.0/1255	9,600 LUP	
Fed. 209	W 473AA	Rem. RXP12	23.5/1200	24.0/1220	24.5/1235	25.0/1255	9,300 LUP	
Fed. 209	W 473AA	WAA12	23.5/1200	23.8/1220	24.2/1235	24.5/1255	9,900 LUP	
Fed. 209	WSL	Fed. 12S3	19.0/1145	19.3/1165	19.7/1180	20.0/1200	10,500 psi	
Fed. 209	WSL	Rem. Fig.-8	19.0/1145	19.5/1175	20.0/1200	21.5/1255	10,900 psi	
Fed. 209	WSL	Rem. R12L				21.5/1255	10,500 psi	
Fed. 209	WSL	Rem. RXP12	19.0/1145	19.5/1175	20.0/1200	21.0/1255	10,700 psi	
Fed. 209	WSL	WAA12				20.0/1200	10,700 psi	
Fed. 209	WSL	WAA12SL	18.5/1145	19.3/1175	20.0/1200	21.5/1255	10,300 psi	
Fed. 209	WST	Fed. 12S3	19.5/1145	20.0/1165	20.5/1180	21.0/1200	10,900 psi	
Fed. 209	WST	Rem. Fig.-8	19.5/1145	20.0/1165	20.5/1180	21.0/1200	9,200 psi	
Fed. 209	WST	Rem. RXP12				21.0/1200	10,000 psi	
Fed. 209	WST	WAA12	19.0/1145	19.5/1165	20.0/1180	20.5/1200	10,000 psi	
Fed. 209A	American Select	WAA12	17.0/1090	18.5/1145	19.1/1175	19.5/1200	10,800 psi	
Fed. 209A	Clays	WAA12	15.0/1090	15.2/1105	15.5/1120	16.0/1145	10,800 psi	
Fed. 209A	Green Dot	Claybuster	18.5/1145	18.5/1145	19.1/1175	19.5/1200	9,300 psi	
Fed. 209A	Green Dot	H. Versalite	18.5/1145	18.5/1145	19.1/1175	19.5/1200	10,400 psi	
Fed. 209A	Green Dot	Pat. Ctrl. Red	18.5/1145	18.5/1145	19.1/1175	19.5/1200	10,500 psi	
Fed. 209A	Green Dot	Rem. Fig.-8	18.5/1145	18.5/1145	19.1/1175	19.5/1200	9,400 psi	
Fed. 209A	Green Dot	WAA12	18.0/1145	18.0/1145	18.6/1175	19.0/1200	10,200 psi	
Fed. 209A	Green Dot	Windjammer	18.5/1145	18.5/1145	19.8/1175	20.0/1200	9,200 psi	
Fed. 209A	IMR 700-X	CB 1118-12	15.0/1095	16.0/1140	17.5/1200	18.5/1245	11,500 psi	
Fed. 209A	IMR 700-X	CS12S				16.3/1200	10,600 psi	
Fed. 209A	IMR 700-X	Fed. 12S3	15.5/1100	16.5/1145	17.3/1175	18.0/1205	11,200 psi	
Fed. 209A	IMR 700-X	BP HCDP				17.0/1200	10,600 psi	#3
Fed. 209A	IMR 700-X	Rem. Fig.-8	15.5/1100	16.5/1145	18.0/1205	19.0/1240	11,200 psi	
Fed. 209A	IMR 700-X	WAA12	15.0/1090	16.0/1135	16.8/1170	17.5/1200	11,300 psi	
Fed. 209A	IMR 700-X	Windjammer	15.0/1095	16.0/1140	17.5/1200	19.0/1255	11,000 psi	
Fed. 209A	IMR 800-X	CB 1118-12	20.5/1095	22.0/1155	23.0/1195	24.5/1250	7,500 psi	
Fed. 209A	IMR 800-X	CS12S				22.3/1200	6,700 psi	
Fed. 209A	IMR 800-X	Fed. 12S3	19.5/1095	21.0/1150	22.5/1200	24.0/1255	8,500 psi	
Fed. 209A	IMR 800-X	BP HCDP				23.0/1200	6,700 psi	#3
Fed. 209A	IMR 800-X	Rem. Fig.-8	20.5/1090	21.5/1135	23.0/1200	24.5/1260	7,700 psi	
Fed. 209A	IMR 800-X	WAA12	20.0/1105	21.0/1140	22.5/1200	24.0/1260	8,600 psi	
Fed. 209A	IMR 800-X	Windjammer	21.0/1105	22.0/1150	23.0/1195	24.5/1265	7,600 psi	
Fed. 209A	IMR PB	CB 1118-12	19.5/1105	21.0/1155	22.5/1205	24.0/1255	8,600 psi	
Fed. 209A	IMR PB	CS12S				21.3/1200	9,200 psi	
Fed. 209A	IMR PB	Fed. 12S4	19.0/1100	20.5/1150	22.0/1200	23.5/1255	10,100 psi	
Fed. 209A	IMR PB	BP HCDP				22.0/1200	9,200 psi	#3
Fed. 209A	IMR PB	Rem. RXP12	19.5/1105	20.5/1140	22.0/1195	23.5/1250	9,300 psi	
Fed. 209A	IMR PB	WAA12	19.0/1100	20.5/1150	22.0/1205	23.5/1260	9,700 psi	
Fed. 209A	IMR PB	Windjammer	19.5/1100	21.0/1155	22.5/1205	24.0/1260	8,700 psi	
Fed. 209A	International	Windjammer	17.4/1090	18.0/1145	19.5/1200	21.3/1255	11,200 psi	
Fed. 209A	Nitro-100	WAA12	15.5/1125	15.5/1145	16.1/1175	16.5/1200	10,900 psi	#9
Fed. 209A	Red Diamond	BP CS12	16.5/1145	17.0/1175	17.5/1200	18.5/1255	10,600 psi	#5
Fed. 209A	Red Diamond	H. Versalite	16.5/1145	17.3/1175	18.0/1200	18.5/1255	11,100 psi	#5
Fed. 209A	Red Diamond	Hawk Original	16.5/1145	17.0/1175	17.5/1200	18.5/1255	10,700 psi	#5
Fed. 209A	Red Diamond	Lage Uniwad				19.0/1255	10,400 psi	#5

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compresion-Formed AA Type								
Fed. 209A	Red Diamond	WAA12	16.0/1145	16.4/1160	16.8/1175	17.5/1200	10,700 psi	#5
Fed. 209A	Red Dot	Claybuster	17.0/1145	17.4/1160	17.8/1175	18.5/1200	10,500 psi	
Fed. 209A	Red Dot	H. Versalite	17.0/1145	17.3/1160	17.6/1175	18.0/1200	10,700 psi	
Fed. 209A	Red Dot	Pat. Ctrl. Red	17.0/1145	17.3/1160	17.6/1175	18.0/1200	10,000 psi	
Fed. 209A	Red Dot	Rem. Fig.-8	17.0/1145	17.4/1160	17.8/1175	18.5/1200	10,200 psi	
Fed. 209A	Red Dot	WAA12	17.0/1145	17.3/1160	17.6/1175	17.0/1145	10,600 psi	
Fed. 209A	Red Dot	Windjammer	16.0/1125	16.5/1145	17.5/1175	18.0/1200	10,000 psi	
Fed. 209A	Solo 1000	WAA12				18.5/1200	11,200 psi	#9
Fed. 209A	Solo 1250	WAA12				24.0/1200	8,600 LUP	#9
Fed. 209A	SR-7625	CB 1118-12	21.5/1105	22.5/1145	24.0/1195	25.5/1250	8,400 psi	
Fed. 209A	SR-7625	CS12S				24.3/1255	9,200 psi	
Fed. 209A	SR-7625	Fed. 12S4	21.0/1100	22.5/1155	23.5/1195	25.0/1255	9,300 psi	
Fed. 209A	SR-7625	BP HCDP				25.0/1255	9,200 psi	#3
Fed. 209A	SR-7625	Rem. RXP12	21.5/1095	22.5/1140	24.0/1195	25.5/1250	8,600 psi	
Fed. 209A	SR-7625	WAA12	21.0/1100	22.5/1155	23.5/1190	25.5/1260	9,100 psi	
Fed. 209A	SR-7625	Windjammer	22.0/1095	23.5/1155	24.5/1200	25.5/1245	7,900 psi	
Fed. 209A	Universal	WAA12	21.5/1200	22.2/1230	22.8/1255	23.6/1310	11,300 psi	
Fed. 209A	WAAP	WAA12	18.0/1145	18.6/1165	19.0/1180	19.5/1200	10,600 psi	
Fed. 399	W 452AA	Fed. 12C1	20.0/1145	20.3/1165	20.7/1180	21.0/1200	10,100 LUP	
Fed. 399	W 452AA	Fed. 12S1				21.0/1200	10,200 LUP	
Fed. 399	W 452AA	Rem. RXP12	20.0/1145	20.5/1165	21.0/1180	21.5/1200	9,900 LUP	
Fed. 399	W452AA	WAA12	20.0/1145	20.2/1165	20.3/1180	20.5/1200	10,000 LUP	
Fio. 616	Clays	Fiocchi FTWI	16.5/1090	17.6/1145	18.2/1175	18.8/1200	10,600 LUP	
Fio. 616	Green Dot	WAA12	18.5/1145	20.0/1200	21.7/1225	23.5/1250	10,100 psi	
Fio. 616	International	Fiocchi TL-1	18.2/1090	18.8/1145	20.0/1200	21.5/1255	10,600 LUP	
Fio. 616	Nitro-100	WAA12	15.5/1125	16.0/1145	16.5/1175	17.0/1200	10,700 psi	#9
Fio. 616	R. Scot D	WAA12	18.0/1125	18.5/1145	19.0/1175	19.5/1200	10,900 LUP	
Fio. 616	Red Diamond	BP CS12	16.5/1145	17.5/1200	18.0/1230	18.5/1255	10,400 psi	#5
Fio. 616	Red Diamond	H. Versalite	16.5/1145	18.0/1200	18.3/1230	18.5/1255	11,100 psi	#5
Fio. 616	Red Diamond	Hawk Original	16.5/1145	17.5/1200	18.0/1230	18.5/1255	10,900 psi	#5
Fio. 616	Red Diamond	Lage Uniwad				19.0/1255	10,200 psi	#5
Fio. 616	Red Diamond	WAA12	16.0/1145	16.4/1160	16.8/1175	17.5/1200	9,900 psi	#5
Fio. 616	Red Dot	WAA12	16.0/1090	17.0/1145	18.0/1200	22.0/1250	10,500 psi	
Fio. 616	Solo 1000	WAA12	16.0/1125	16.5/1145	17.5/1175	18.5/1200	10,000 psi	#9
Fio. 616	Unique	WAA12				21.5/1200	9,100 psi	
Fio. 616	Universal	Fiocchi TL1	22.5/1200	22.7/1215	22.9/1230	23.3/1255	10,900 psi	
Rem. 209	Nitro-100	H. Versalite				16.5/1145		
Rem. 209	Nitro-100	WAA12	17.0/1145	17.2/1160	17.5/1175	18.0/1200		
Rem. 209	Red Diamond	BP CS12	17.0/1145	17.5/1175	18.0/1200	19.5/1255	10,500 psi	#5
Rem. 209	Red Diamond	H. Versalite	17.0/1145	17.8/1175	18.5/1200	19.0/1255	9,900 psi	#5
Rem. 209	Red Diamond	Hawk Original	17.0/1145	17.5/1175	18.0/1200	19.5/1255	9,200 psi	#5
Rem. 209	Red Diamond	WAA12	17.0/1145	17.1/1160	17.3/1175	17.5/1200	8,200 psi	#5
Rem. 209	American Select	Rem. Fig.-8				22.5/1250	9,400 psi	
Rem. 209	American Select	WAA12	17.0/1090	19.0/1145	20.1/1175	21.0/1200	9,600 psi	
Rem. 209	Clays	Pat. Ctrl. Red	17.1/1090	18.4/1145	19.0/1175	19.6/1200	8,400 LUP	
Rem. 209	Green Dot	WAA12				20.0/1200	9,800 psi	
Rem. 209	Herco	WAA12				27.0/1310	8,100 psi	
Rem. 209	IMR 700-X	CB 1118-12	15.5/1090	17.0/1150	18.0/1195	19.5/1255	10,400 psi	
Rem. 209	IMR 700-X	CS12S				16.3/1190	8,500 psi	
Rem. 209	IMR 700-X	Fed. 12S3	15.5/1090	16.5/1135	18.0/1190	19.5/1250	10,900 psi	
Rem. 209	IMR 700-X	BP HCDP				17.0/1190	8,500 psi	#3
Rem. 209	IMR 700-X	Rem. Fig.-8	16.0/1100	17.0/1145	18.5/1205	19.5/1250	10,200 psi	
Rem. 209	IMR 700-X	WAA12	15.5/1095	17.0/1145	18.5/1205	20.0/1260	10,800 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compresion-Formed AA Type								
Rem. 209	IMR 700-X	Windjammer	16.0/1090	17.5/1145	19.0/1195	20.5/1245	9,300 psi	
Rem. 209	IMR PB	CB 1118-12	20.5/1100	21.5/1140	23.0/1200	24.5/1250	7,700 psi	
Rem. 209	IMR PB	CS12S				23.3/1200	8,500 psi	
Rem. 209	IMR PB	Fed. 12S4	19.5/1095	20.5/1140	22.0/1195	24.0/1260	9,600 psi	
Rem. 209	IMR PB	BP HCDP				24.0/1200	8,500 psi	#3
Rem. 209	IMR PB	Rem. RXP12	20.0/1100	21.0/1140	22.5/1200	24.0/1255	8,900 psi	
Rem. 209	IMR PB	WAA12	20.0/1100	21.0/1140	23.0/1200	24.5/1260	8,600 psi	
Rem. 209	IMR PB	Windjammer	20.0/1095	21.5/1145	23.0/1205	24.5/1255	7,900 psi	
Rem. 209	International	Rem. Fig.-8	20.1/1145	20.6/1175	21.1/1200	22.1/1255	8,000 LUP	
Rem. 209P	Nitro-100	WAA12	15.5/1125	15.5/1145	16.3/1175	17.0/1200	10,100 psi	#9
Rem. 209P	R. Scot D	WAA12	18.5/1125	19.0/1145	19.5/1175	20.0/1200	10,800 LUP	
Rem. 209P	Red Dot	WAA12	17.0/1090	17.5/1145	18.3/1175	19.0/1200	9,500 psi	
Rem. 209P	Solo 1000	WAA12	17.0/1125	17.0/1125	17.5/1175	18.0/1200	11,500 psi	#9
Rem. 209P	Solo 1250	WAA12	24.0/1200	24.6/1235	25.3/1280	26.0/1310	10,300 LUP	#9
Rem. 209P	Solo 1250	WAA12F114				25.5/1255	9,200 LUP	
Rem. 209P	SR-7625	CB 1118-12	22.0/1105	23.0/1145	24.5/1205	25.5/1250	8,000 psi	
Rem. 209P	SR-7625	CS12S				24.8/1265	9,200 psi	
Rem. 209P	SR-7625	Fed. 12S4	21.5/1100	22.5/1145	24.0/1205	25.5/1255	9,100 psi	
Rem. 209P	SR-7625	BP HCDP				25.5/1265	9,200 psi	#3
Rem. 209P	SR-7625	Rem. RXP12	22.0/1105	23.0/1145	24.5/1205	25.5/1250	8,200 psi	
Rem. 209P	SR-7625	WAA12	22.0/1110	23.0/1145	24.5/1195	26.0/1255	8,000 psi	
Rem. 209P	SR-7625	Windjammer	22.0/1095	23.5/1150	24.5/1190	26.0/1250	7,200 psi	
Rem. 209P	Unique	WAA12	23.0/1200	23.5/1225	24.0/1250	26.0/1310	9,700 psi	
Win. 209	#2 Improved	WAA12	17.5/1145	17.7/1160	18.0/1175	18.5/1200	11,200 psi	#9
Win. 209	#2 Improved	WAA12SL				17.0/1125	9,800 psi	#9
Win. 209	Alliant e3	Rem. Fig. 8				15.0/1090	8,520 psi	
Win. 209	Alliant e3	Claybuster 4118				15.0/1090	8,555 psi	
Win. 209	Alliant e3	WAA12SL				15.0/1090	8,645 psi	
Win. 209	Alliant e3	Rem. RXP12				15.0/1090	8,700 psi	
Win. 209	Alliant e3	Claybuster 0118				15.0/1090	8,905 psi	
Win. 209	Alliant e3	Duster - Blue				15.0/1090	9,015 psi	
Win. 209	Alliant e3	WAA12 (white)				15.0/1090	9,090 psi	
Win. 209	Alliant e3	Claybuster 0118				16.0/1145	9,060 psi	
Win. 209	Alliant e3	Rem. Fig. 8				16.0/1145	9,325 psi	
Win. 209	Alliant e3	WAA12SL				16.0/1145	9,625 psi	
Win. 209	Alliant e3	WAA12 (white)				16.0/1145	9,900 psi	
Win. 209	Alliant e3	Duster - Blue				16.0/1145	10,265 psi	
Win. 209	Alliant e3	Rem. RXP12				16.5/1145	9,835 psi	
Win. 209	Alliant e3	Claybuster 4118				16.5/1145	9,835 psi	
Win. 209	Alliant e3	Claybuster 0118				17.0/1200	9,970 psi	
Win. 209	Alliant e3	WAA12 (white)				17.0/1200	10,450 psi	
Win. 209	Alliant e3	Duster - Blue				17.0/1200	10,505 psi	
Win. 209	Alliant e3	Claybuster 4118				17.5/1200	10,855 psi	
Win. 209	Alliant e3	Rem. Fig. 8				17.5/1200	10,920 psi	
Win. 209	American Select	Claybuster	17.0/1090	18.5/1145	19.5/1200	20.5/1250	10,700 psi	
Win. 209	American Select	CS12S				18.0/1200	11,200 psi	
Win. 209	American Select	Pat. Ctrl. Red	17.0/1090	18.5/1145	20.0/1200	21.5/1250	10,800 psi	
Win. 209	American Select	Rem. Fig.-8	17.5/1090	19.0/1145	19.6/1175	20.0/1200	9,800 psi	
Win. 209	American Select	Rem. RXP12	17.0/1090	19.0/1145	20.5/1200	21.0/1250	10,800 psi	
Win. 209	American Select	WAA12	17.0/1090	18.0/1145	18.8/1175	19.5/1200	10,300 psi	
Win. 209	American Select	WT12 Orange	18.5/1145	18.8/1160	19.2/1175	19.5/1200	10,700 psi	
Win. 209	Clays	CB 3118-12-A	15.0/1090	15.3/1105	15.6/1120	16.0/1145	10,500 psi	
Win. 209	Clays	CB 3118-12-AR	15.0/1090	15.2/1120	15.3/1130	15.4/1145	10,600 psi	

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compresion-Formed AA Type								
Win. 209	Clays	CS12S	16.8/1145	17.0/1170	17.1/1180	17.3/1200	9,700 LUP	
Win. 209	Clays	H. Versalite	16.4/1090	17.6/1145	18.2/1175	18.8/1200	10,600 LUP	
Win. 209	Clays	BP HCDP	17.5/1145	17.7/1170	17.8/1180	18.0/1200	9,700 LUP	#3
Win. 209	Clays	Rem. Fig.-8	16.0/1090	17.0/1145	17.6/1175	18.1/1200	9,400 LUP	
Win. 209	Clays	Trapper	15.5/1090	15.6/1115	15.7/1130	16.5/1145	10,700 LUP	
Win. 209	Clays	WAA12	16.1/1090	17.3/1145	17.8/1175	18.2/1200	9,800 LUP	
Win. 209	Clays	Windjam. II	15.5/1090	16.3/1145	17.0/1175	17.5/1200	11,100 psi	
Win. 209	Green Dot	BP SCAT				19.0/1175	8,800 psi	#6
Win. 209	Green Dot	CS12S	18.3/1175	18.8/1200	19.3/1215	19.8/1230	10,000 psi	
Win. 209	Green Dot	Fed. 12C1	18.5/1145	19.3/1175	19.5/1200	21.0/1250	10,200 psi	
Win. 209	Green Dot	Fed. 12S3				18.0/1090	9,700 psi	
Win. 209	Green Dot	Fiocchi FTW1	19.5/1145	19.6/1160	19.8/1175	20.0/1200	9,900 psi	
Win. 209	Green Dot	H. Versalite	17.5/1090	19.5/1145	21.0/1200	22.0/1250	9,900 psi	
Win. 209	Green Dot	BP HCDP	19.0/1175	19.5/1200	20.0/1215	20.5/1230	10,000 psi	#3
Win. 209	Green Dot	Pat. Ctrl. Red	18.0/1090	20.5/1200	22.2/1275	23.0/1310	10,200 psi	
Win. 209	Green Dot	Rem. Fig.-8	18.0/1090	19.0/1145	20.5/1200	22.0/1250	10,300 psi	
Win. 209	Green Dot	Rem. RXP12	17.5/1090	18.0/1145	19.5/1200	21.0/1250	9,500 psi	
Win. 209	Green Dot	WAA12	17.5/1090	18.0/1145	19.5/1200	21.5/1250	10,500 psi	
Win. 209	Green Dot	WAA12SL	18.0/1090	19.0/1145	19.8/1175	20.5/1200	10,700 psi	
Win. 209	Green Dot	Windjammer	18.0/1145	18.9/1160	19.8/1175	21.0/1200	9,000 psi	
Win. 209	Green Dot	WT12 Orange	16.5/1090	18.0/1145	19.0/1200	19.0/1250	9,900 psi	
Win. 209	Herco	Fed. 12C1				25.0/1250	9,400 psi	
Win. 209	Herco	H. Versalite	24.5/1250	24.5/1250	24.5/1250	26.5/1310	9,900 psi	
Win. 209	Herco	Pat. Ctrl. Red				25.0/1250	9,100 psi	
Win. 209	Herco	Rem. RXP12	25.0/1250	25.0/1250	25.0/1250	26.5/1310	9,100 psi	
Win. 209	Herco	WAA12	25.0/1250	25.0/1250	25.0/1250	26.5/1310	9,300 psi	
Win. 209	IMR 700-X	BP SCAT	16.2/1180	16.6/1185	17.1/1190	18.0/1200	8,600 psi	#6
Win. 209	IMR 700-X	CB 1118-12	15.5/1105	16.5/1150	17.5/1195	19.0/1255	11,200 psi	
Win. 209	IMR 700-X	CS12S				16.3/1190	10,500 psi	
Win. 209	IMR 700-X	Fed. 12S3	15.5/1100	16.2/1130	16.9/1160	17.5/1190	11,100 psi	
Win. 209	IMR 700-X	BP HCDP				17.0/1190	10,500 psi	#3
Win. 209	IMR 700-X	Rem. Fig.-8	15.5/1090	16.5/1135	18.0/1200	19.5/1255	11,400 psi	
Win. 209	IMR 700-X	WAA12	15.5/1105	16.0/1130	16.5/1150	17.5/1190	10,800 psi	
Win. 209	IMR 700-X	Windjammer	15.5/1110	16.5/1150	17.5/1195	19.0/1250	11,000 psi	
Win. 209	IMR 800-X	CB 1118-12	20.0/1095	21.5/1150	23.0/1205	24.5/1260	7,800 psi	
Win. 209	IMR 800-X	CS12S				22.3/1220	8,000 psi	
Win. 209	IMR 800-X	CS12S	21.3/1145	22.3/1185	23.3/1220	24.3/1255	7,800 LUP	
Win. 209	IMR 800-X	Fed. 12S3	20.0/1100	21.5/1155	22.5/1195	24.0/1250	8,400 psi	
Win. 209	IMR 800-X	Rem. Fig.-8	20.0/1105	21.0/1150	22.5/1195	24.5/1255	7,700 psi	
Win. 209	IMR 800-X	WAA12	20.0/1100	21.0/1145	22.0/1190	24.0/1265	8,800 psi	
Win. 209	IMR 800-X	Windjammer	20.5/1095	21.5/1145	22.5/1190	24.0/1260	7,700 psi	
Win. 209	IMR PB	CB 1118-12	20.0/1100	21.5/1155	23.0/1210	24.0/1250	8,500 psi	
Win. 209	IMR PB	CS12S				23.3/1200	7,700 psi	
Win. 209	IMR PB	Fed. 12S4	19.5/1105	20.5/1145	22.0/1200	23.5/1255	9,900 psi	
Win. 209	IMR PB	BP HCDP				24.0/1200	7,700 psi	#3
Win. 209	IMR PB	Rem. RXP12	20.0/1110	21.0/1155	22.5/1205	24.0/1265	9,500 psi	
Win. 209	IMR PB	WAA12	19.5/1095	21.0/1150	22.5/1205	24.0/1265	9,400 psi	
Win. 209	IMR PB	Windjammer	20.0/1100	21.5/1155	23.0/1205	24.5/1260	8,400 psi	
Win. 209	International	CB 3118-12-A	16.5/1090	17.4/1145	19.0/1200	20.0/1255	11,600 psi	
Win. 209	International	CB-3118-12-AR	16.8/1090	17.5/1145	19.6/1200	20.5/1255	10,600 psi	
Win. 209	International	CS12S	16.9/1090	17.4/1145	18.5/1200	20.5/1255	10,800 LUP	
Win. 209	International	H. Versalite	17.4/1090	18.1/1145	18.7/1175	19.2/1200	9,800 LUP	
Win. 209	International	BP HCDP	17.6/1090	18.1/1145	19.2/1200	21.2/1255	10,800 LUP	#3

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compresion-Formed AA Type								
Win. 209	International	Pat. Ctrl. Red	18.3/1090	18.9/1145	20.2/1200	21.3/1255	9,700 LUP	
Win. 209	International	WAA12	17.6/1090	18.1/1145	19.2/1200	21.3/1255	10,800 LUP	
Win. 209	International	Windjam. II	17.5/1090	18.0/1145	18.9/1175	19.7/1200	9,400 psi	
Win. 209	Nitro-100	BP 18	15.5/1125	16.0/1145	17.0/1200	18.0/1255	10,800 psi	#9
Win. 209	Nitro-100	CB 1118-12	15.5/1125	16.5/1145	16.8/1175	17.0/1200	9,300 psi	#9
Win. 209	Nitro-100	CS12S	16.3/1145	16.8/1175	17.3/1200	17.8/1200	10,000 psi	
Win. 209	Nitro-100	Fed. 12C1	15.5/1125	16.0/1145	17.0/1200	18.0/1255	11,400 psi	#9
Win. 209	Nitro-100	Fed. 12S3	15.5/1125	15.5/1145	16.3/1175	17.0/1200	11,100 psi	#9
Win. 209	Nitro-100	H. Versalite	15.5/1125	15.5/1145	16.3/1175	17.0/1200	11,200 psi	#9
Win. 209	Nitro-100	Hawk II	16.0/1145	16.2/1160	16.5/1175	17.0/1200	10,400 psi	#9
Win. 209	Nitro-100	BP HCDP	17.0/1145	17.2/1155	17.3/1160	17.5/1175	8,500 psi	#3
Win. 209	Nitro-100	BP HCDP	18.0/1200	18.2/1225	18.3/1235	18.5/1255	10,000 psi	#3
Win. 209	Nitro-100	Lage Uniwad				18.5/1200		
Win. 209	Nitro-100	Pat. Ctrl. Red	15.5/1125	15.5/1145	17.5/1200	18.5/1255	11,100 psi	#9
Win. 209	Nitro-100	Rem. Fig.-8	15.5/1125	17.0/1145	17.0/1175	17.0/1200	9,600 psi	#9
Win. 209	Nitro-100	Rem. RXP12	16.0/1145	17.0/1200	18.0/1230	19.0/1255	10,500 psi	#9
Win. 209	Nitro-100	Rem. TGT12	15.5/1125	16.3/1170	17.2/1210	18.0/1255	11,500 psi	#9
Win. 209	Nitro-100	Trapper	15.5/1145	15.7/1160	16.0/1175	16.5/1200	10,800 psi	#9
Win. 209	Nitro-100	WAA12	15.5/1125	16.0/1145	16.5/1175	17.0/1200	9,400 psi	#9
Win. 209	Nitro-100	WAA12SL	15.5/1125	15.5/1145	16.3/1175	17.0/1200	9,900 psi	#9
Win. 209	Promo	WAA12 (white)				17.0/1145		
Win. 209	Promo	Rem. Fig. 8				17.5/1145		
Win. 209	Promo	Windjammer				17.5/1145		
Win. 209	Promo	Claybuster 3118-12				17.0/1145		
Win. 209	Promo	Red PC				17.5/1145		
Win. 209	Promo	WAA12 (white)				18.0/1200		
Win. 209	Promo	Rem. Fig. 8				18.5/1200		
Win. 209	Promo	Windjammer				18.5/1200		
Win. 209	Promo	Claybuster 3118-12				18.0/1200		
Win. 209	Promo	Red PC				18.5/1200		
Win. 209	R. Scot D	Claybuster	18.0/1125	18.5/1145	20.0/1200	21.5/1255	10,500 LUP	
Win. 209	R. Scot D	Fed. 12C1	18.5/1125	19.0/1145	20.5/1200	21.5/1255	10,900 LUP	
Win. 209	R. Scot D	Fed. 12S3	18.0/1125	18.5/1145	19.0/1175	19.5/1200	10,400 LUP	
Win. 209	R. Scot D	H. Versalite	18.0/1125	19.3/1175	20.0/1200	21.0/1255	10,900 LUP	
Win. 209	R. Scot D	Lage Uniwad	18.5/1125	19.0/1145	19.8/1175	20.5/1200		
Win. 209	R. Scot D	Pat. Ctrl. Red	18.5/1125	19.0/1145	20.0/1200	21.0/1255	10,800 LUP	
Win. 209	R. Scot D	Rem. Fig.-8	19.0/1125	19.5/1145	20.0/1175	20.5/1200	10,100 LUP	
Win. 209	R. Scot D	Rem. RXP12	18.5/1125	19.0/1145	20.5/1200	21.5/1255	10,900 LUP	
Win. 209	R. Scot D	WAA12	18.5/1125	19.0/1145	19.5/1175	20.0/1200	10,800 LUP	
Win. 209	R. Scot D	WAA12F1	18.5/1125	19.0/1145	19.6/1175	20.0/1200	10,000 LUP	
Win. 209	R. Scot D	WAA12F114	20.0/1200	20.4/1215	20.9/1230	21.5/1255	10,900 LUP	
Win. 209	R. Scot D	WAA12SL	18.0*/1125	18.3/1130	18.6/1135	19.0/1145	9,100 LUP	#11
Win. 209	R. Scot D	Windjammer	18.5/1125	19.0/1145	20.5/1200	21.5/1255	10,700 LUP	
Win. 209	Red Diamond	BP CS12	16.5/1145	17.0/1175	17.5/1200	18.5/1255	10,800 psi	#5
Win. 209	Red Diamond	H. Versalite	16.5/1145	17.3/1175	18.0/1200	18.5/1255	10,500 psi	#5
Win. 209	Red Diamond	Hawk Original	16.5/1145	17.0/1175	17.5/1200	18.5/1255	10,700 psi	#5
Win. 209	Red Diamond	Lage Uniwad				19.0/1255	10,000 psi	#5
Win. 209	Red Diamond	WAA12	16.0/1145	16.4/1160	16.8/1175	17.5/1200	11,000 psi	#5
Win. 209	Red Dot	BP SCAT	16.5/1100	16.7/1120	16.8/1130	17.0/1145	10,000 psi	#6
Win. 209	Red Dot	CS12S	15.3/1060	15.5/1075	15.8/1100	16.3/1145	10,000 psi	
Win. 209	Red Dot	Fed. 12C1	17.5/1145	17.8/1160	18.1/1175	18.5/1200	9,700 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compresion-Formed AA Type								
Win. 209	Red Dot	Fed. 12S3				17.0/1090	10,400 psi	
Win. 209	Red Dot	Fiocchi FTW1	17.5/1145	17.8/1160	18.1/1175	18.5/1200	10,700 psi	
Win. 209	Red Dot	H. Versalite	16.5/1090	18.0/1145	18.6/1175	19.0/1200	9,700 psi	
Win. 209	Red Dot	BP HCDP	16.0/1060	16.5/1100	16.7/1120	17.0/1145	10,000 psi	#3
Win. 209	Red Dot	Pat. Ctrl. Red	16.0/1090	17.5/1145	18.1/1175	18.5/1200	10,500 psi	
Win. 209	Red Dot	Rem. Fig.-8	16.0/1090	17.5/1145	18.1/1175	18.5/1200	10,700 psi	
Win. 209	Red Dot	Rem. RXP12	16.5/1090	17.0/1145	17.8/1175	18.5/1200	9,800 psi	
Win. 209	Red Dot	WAA12	16.0/1090	17.0/1145	17.6/1175	18.0/1200	10,400 psi	
Win. 209	Red Dot	WAA12SL				16.0/1090	9,300 psi	
Win. 209	Red Dot	Windjammer	17.5/1145	17.8/1160	18.1/1175	18.5/1200	9,900 psi	
Win. 209	Red Dot	WT12 Orange	16.5/1145	16.6/1160	16.8/1175	17.0/1200	10,700 psi	
Win. 209	Scot 453	WAA12SL	16.0/1125	17.5/1145	18.1/1175	18.5/1200	11,200 psi	
Win. 209	Solo 1000	BP 18	17.0/1125	17.5/1145	18.0/1175	18.5/1200	9,700 psi	#9
Win. 209	Solo 1000	CB 1118-12	16.5/1125	17.0/1145	18.0/1200	19.5/1255	11,500 psi	#9
Win. 209	Solo 1000	Claybuster	17.5/1125	18.0/1145	19.5/1200	21.0/1255		
Win. 209	Solo 1000	CS12S	17.3/1145	17.8/1170	18.3/1190	19.3/1255	10,600 psi	
Win. 209	Solo 1000	Fed. 12C1	16.5/1125	17.0/1145	17.5/1175	18.0/1200	11,400 psi	#9
Win. 209	Solo 1000	Fed. 12S3	16.0/1125	16.5/1145	17.3/1175	18.0/1200	10,700 psi	#9
Win. 209	Solo 1000	H. Versalite	16.5/1125	17.0/1145	17.5/1175	18.0/1200	10,300 psi	#9
Win. 209	Solo 1000	Hawk II	17.0/1145	17.2/1160	17.5/1175	18.0/1200	11,500 psi	#9
Win. 209	Solo 1000	BP HCDP	18.0/1145	18.5/1170	19.0/1190	20.0/1255	10,600 psi	#3
Win. 209	Solo 1000	Lage Uniwad	18.0/1125	18.5/1145	19.2/1170	20.0/1200		
Win. 209	Solo 1000	Pat. Ctrl. Red	17.0/1125	17.5/1145	18.5/1200	19.5/1255	11,000 psi	#9
Win. 209	Solo 1000	Rem. Fig.-8	16.5/1125	17.0/1145	17.5/1175	18.0/1200	9,800 psi	#9
Win. 209	Solo 1000	Rem. RXP12	17.0/1145	17.2/1160	17.5/1175	18.0/1200	10,700 psi	#9
Win. 209	Solo 1000	Rem. TGT12				16.5/1125	8,800 psi	#9
Win. 209	Solo 1000	Trapper	17.0/1145	17.2/1160	17.5/1175	18.0/1200	10,800 psi	#9
Win. 209	Solo 1000	WAA12	17.0/1125	17.5/1145	18.0/1175	18.5/1200	10,800 psi	#9
Win. 209	Solo 1000	WAA12F1	18.0/1125	18.5/1145	19.1/1175	19.5/1200		
Win. 209	Solo 1000	WAA12F114	18.5/1145	19.1/1175	19.5/1200	21.0/1255		
Win. 209	Solo 1000	WAA12SL				16.5/1125	9,500 psi	#9
Win. 209	Solo 1000	Windjammer	18.0/1125	18.5/1145	20.0/1200	21.0/1255	9,700 psi	
Win. 209	Solo 1250	BP 18	24.5/1200	24.9/1215	25.3/1230	26.0/1255	8,400 LUP	#9
Win. 209	Solo 1250	BP SCAT	23.5/1200	24.0/1220	24.2/1230	24.5/1240	9,000 psi	#6
Win. 209	Solo 1250	CB 1118-12	24.5/1200	26.0/1255	26.5/1285	27.0/1310	10,500 LUP	#9
Win. 209	Solo 1250	Claybuster	24.5/1200	26.0/1255	26.5/1285	27.0/1310	10,500 LUP	
Win. 209	Solo 1250	CS12S	22.8/1200	23.3/1220	23.8/1240	24.3/1280	9,700 psi	
Win. 209	Solo 1250	H. Versalite	23.5/1200	23.9/1215	24.3/1230	25.0/1255	9,000 LUP	#9
Win. 209	Solo 1250	Hawk II				24.5/1200	8,300 LUP	#9
Win. 209	Solo 1250	BP HCDP	23.5/1200	24.0/1220	24.5/1240	25.0/1280	9,700 LUP	#3
Win. 209	Solo 1250	Lage Uniwad				27.0/1310	10,400 LUP	#9
Win. 209	Solo 1250	Pat. Ctrl. Red	24.5/1200	26.0/1255	26.3/1285	26.5/1310	10,400 LUP	#9
Win. 209	Solo 1250	Rem. Fig.-8	24.0/1200	24.8/1235	25.7/1280	26.5/1310	10,400 LUP	#9
Win. 209	Solo 1250	Trapper				24.0/1200	8,700 LUP	#9
Win. 209	Solo 1250	WAA12	23.5/1200	24.6/1235	25.7/1280	26.5/1310	10,500 LUP	#9
Win. 209	Solo 1250	WAA12F114				25.5/1255	9,500 LUP	#9
Win. 209	Solo 1250	Windjammer				27.0/1310	10,400 LUP	#9
Win. 209	SR-7625	CB 1118-12	21.5/1100	22.5/1145	24.0/1195	26.0/1265	8,200 psi	
Win. 209	SR-7625	CS12S				24.8/1260	9,200 psi	
Win. 209	SR-7625	Fed. 12S4	21.0/1095	22.5/1145	24.0/1200	25.5/1260	9,200 psi	
Win. 209	SR-7625	BP HCDP				25.5/1260	9,200 psi	#3
Win. 209	SR-7625	Rem. RXP12	22.0/1105	23.0/1145	24.5/1200	26.0/1255	8,300 psi	
Win. 209	SR-7625	WAA12	21.0/1090	22.5/1150	23.5/1190	25.5/1295	9,600 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compresion-Formed AA Type								
Win. 209	SR-7625	Windjammer	22.0/1105	23.0/1140	24.5/1200	26.0/1255	7,900 psi	
Win. 209	Unique	Fed. 12C1	22.0/1200	22.5/1225	22.7/1235	23.0/1250	9,500 psi	
Win. 209	Unique	Fiocchi FTW1				22.5/1200	8,800 psi	
Win. 209	Unique	H. Versalite	21.0/1200	24.0/1250	24.5/1280	25.0/1310	10,300 psi	
Win. 209	Unique	Pat. Ctrl. Red	23.5/1200	24.5/1250	24.8/1280	25.0/1310	9,100 psi	
Win. 209	Unique	Rem. Fig.-8	22.5/1200	23.0/1210	23.7/1225	24.0/1250	9,000 psi	
Win. 209	Unique	Rem. RXP12	22.0/1200	23.0/1250	23.5/1280	24.0/1310	9,800 psi	
Win. 209	Unique	WAA12	21.0/1200	23.5/1250	24.5/1280	25.5/1310	10,000 psi	
Win. 209	Unique	WAA12SL	22.5/1200	23.7/1225	23.8/1235	24.0/1250	9,900 psi	
Win. 209	Unique	Windjammer				22.5/1200	8,200 psi	
Win. 209	Unique	WT12 Orange	21.5/1200	22.0/1225	22.2/1235	22.5/1250	9,500 psi	
Win. 209	Universal	Rem. Fig.-8	22.5/1200	23.5/1255	24.0/1285	24.5/1310	10,700 psi	
Win. 209	Universal	WAA12	22.0/1200	22.2/1215	22.4/1230	22.7/1255	10,600 psi	
Win. 209	W 452AA	Fed. 12C1	19.5/1145	20.0/1165	20.5/1180	21.0/1200	10,000 LUP	
Win. 209	W 452AA	Fed. 12S1	19.5/1145	19.8/1165	20.2/1180	20.5/1200	10,200 LUP	
Win. 209	W 452AA	Rem. RXP12	19.5/1145	20.0/1165	20.5/1180	21.0/1200	9,900 LUP	
Win. 209	W 452AA	WAA12	19.5/1145	19.8/1165	20.2/1180	20.5/1200	10,100 LUP	
Win. 209	W 473AA	Fed. 12C1				24.0/1200	8,300 LUP	
Win. 209	W 473AA	Fed. 12S1	24.0/1200	25.0/1255	26.5/1295	28.0/1330	10,400 LUP	
Win. 209	W 473AA	Rem. RXP12	24.0/1200	25.0/1255	26.5/1295	28.0/1330	10,100 LUP	
Win. 209	W 473AA	WAA12	23.5/1200	25.0*/1255	27.0*/1300	28.0/1330	10,100 LUP	*#12 & 13
Win. 209	W 540	WAA12	32.5/1300	33.2/1335	34.2/1370	35.0/1400	10,000 LUP	
Win. 209	WSF	CS12S	26.8/1315	27.5/1340	28.3/1370	28.6/1400	10,600 psi	
Win. 209	WSF	Fed. 12S3	27.5/1310	28.0/1340	28.5/1365	29.5/1400	10,800 psi	
Win. 209	WSF	BP HCDP	27.5/1315	28.3/1345	29.0/1370	30.0/1400	10,600 psi	#3
Win. 209	WSF	WAA12	27.5/1310	28.3/1340	29.2/1370	30.0/1400	10,200 psi	
Win. 209	WSF	Fed. 12S3				30.0/1400		
Win. 209	WSL	Rem. Fig.-8	19.0/1145	19.5/1175	20.0/1200	20.0/1200	10,800 psi	
Win. 209	WSL	Rem. R12L				21.0/1255	10,800 psi	
Win. 209	WSL	Rem. RXP12	19.5/1200	20.0/1220	20.5/1235	21.5/1255	10,900 psi	
Win. 209	WSL	WAA12	20.0/1200	20.3/1220	20.7/1235	21.0/1255	10,900 psi	
Win. 209	WSL	WAA12SL	18.5/1145	19.3/1175	20.0/1200	21.0/1255	10,800 psi	
Win. 209	WST	Fed. 12S3	19.0/1145	19.3/1165	19.7/1180	21.5/1255	10,900 psi	
Win. 209	WST	Rem. Fig.-8	19.0/1145	19.5/1165	20.0/1180	20.0/1200	10,000 psi	
Win. 209	WST	Rem. RXP12	19.0/1145	19.3/1165	19.7/1180	20.5/1200	9,700 psi	
Win. 209	WST	WAA12	18.5*/1145	19.0/1165	19.5/1180	20.0*/1200	9,800 psi	*#14 & 15
Win. AATP	International	Pat. Ctrl. Red	17.3/1090	17.7/1145	20.0/1200	20.9/1255	10,700 psi	
Win. AATP	International	WAA12	17.0/1090	17.5/1145	18.1/1175	18.5/1200	11,000 psi	
Win. AATP	WSL	WAA12SL	18.0*/1125	18.5/1150	19.0/1175	19.5/1200	10,100 psi	*#16
Win. AATP	WST	WAA12	19.0*/1145	19.5/1165	20.0/1180	20.5*/1200	10,400 psi	*#14 & 15
Winchester: Polyformed (Separate Plastic Base Wad)								
CCI 209M	Green Dot	WAA12	18.5/1090	20.0/1145	23.0/1255	25.0/1310	9,000 psi	
CCI 209M	Red Dot	WAA12	17.0/1090	18.0/1145	21.5/1255	22.0/1310	9,400 psi	
CCI 209M	Unique	WAA12	25.0/1255	25.0/1255	25.0/1255	26.0/1310	8,500 psi	
CCI 209M	Universal	Windjammer	24.5/1200	25.1/1225	25.8/1255	26.2/1310	9,600 psi	
CCI 209SC	Universal	Windjammer	25.0/1200	25.7/1225	26.5/1255	27.5/1310	7,900 psi	
Fed. 209	Green Dot	WAA12	18.5/1090	20.0/1145	23.5/1255	24.5/1310	9,400 psi	
Fed. 209	Red Dot	WAA12	16.5/1090	18.0/1145	19.0/1200	20.5/1255	10,200 psi	
Fed. 209	Unique	WAA12	23.5/1200	25.0/1255	25.8/1285	27.0/1310	8,500 psi	
Fed. 209A	Universal	Rem. Fig.-8	24.0/1200	24.3/1225	24.8/1255	26.0/1310	9,400 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Polyformed (Separate Plastic Base Wad)								
Fio. 616	Green Dot	WAA12	18.5/1090	20.7/1170	23.0/1255	24.5/1310	8,900 psi	
Fio. 616	Red Dot	WAA12	17.0/1090	19.5/1200	21.5/1255	22.5/1310	10,600 psi	
Fio. 616	Unique	WAA12	23.5/1200	25.0/1255	26.6/1285	27.5/1310	9,200 psi	
Rem. 209P	Green Dot	WAA12				25.0/1310	8,800 psi	
Rem. 209P	Red Dot	WAA12	16.5/1090	19.5/1200	21.5/1255	22.5/1310	10,200 psi	
Rem. 209P	Unique	WAA12	23.5/1200	25.5/1255	26.4/1285	27.0/1310	9,000 psi	
Win. 209	Green Dot	Fed. 12S3	21.5/1200	23.5/1255	24.1/1285	24.5/1310	9,900 psi	
Win. 209	Green Dot	H. Versalite	18.5/1090	21.5/1200	24.0/1255	25.0/1310	8,900 psi	
Win. 209	Green Dot	Pat. Ctrl. Red	20.5/1145	22.0/1200	23.5/1255	25.5/1310	8,700 psi	
Win. 209	Green Dot	Rem. Fig.-8	18.5/1090	18.9/1115	19.5/1145	21.5/1200	8,200 psi	
Win. 209	Green Dot	WAA12	20.5/1145	22.0/1200	23.5/1255	25.5/1310	8,900 psi	
Win. 209	Red Dot	Fed. 12S3	17.5/1090	17.6/1105	17.8/1125	18.0/1145	8,900 psi	
Win. 209	Red Dot	H. Versalite	16.5/1090	18.0/1145	21.5/1255	22.5/1310	10,300 psi	
Win. 209	Red Dot	Pat. Ctrl. Red	17.0/1090	19.5/1200	21.0/1255	22.5/1310	10,200 psi	
Win. 209	Red Dot	Rem. Fig.-8	17.0/1090	17.3/1105	17.7/1125	18.0/1145	8,000 psi	
Win. 209	Red Dot	WAA12	16.5/1090	18.0/1145	19.5/1200	21.0/1255	9,400 psi	
Win. 209	Unique	Fed. 12S3	23.5/1200	25.0/1255	25.7/1285	26.0/1310	9,400 psi	
Win. 209	Unique	H. Versalite	23.0/1200	25.0/1255	25.9/1285	26.5/1310	9,000 psi	
Win. 209	Unique	Pat. Ctrl. Red	23.5/1200	25.0/1255	25.9/1285	26.5/1310	8,600 psi	
Win. 209	Unique	Rem. Fig.-8				23.0/1200	7,400 psi	
Win. 209	Unique	WAA12	23.0/1200	25.0/1255	25.9/1285	26.5/1310	8,600 psi	
Win. 209	Universal	WAA12	24.0/1200	24.5/1225	25.3/1255	26.0/1310	10,100 psi	
Win. 209	W 452AA	Fed. 12S3				20.5/1145	7,500 LUP	

Load Notes: #1 = Disperser-X. #2 = Piston Skeet. #3 = Add one 20-gauge, 0.135" card inside bottom of shotcup. #4 = Add two 20-gauge, 0.135" cards inside bottom of shotcup. #5 = Minimum overall length = 2 9/32", maximum crimp depth = 2/32". #6 = Minimum overall length 2 10/32", maximum crimp depth = 2/32". #7 = Special Instructions: To prevent concave or open crimps in these 7/8-ounce loads: lower pressures pre-crimp die to gather more plastic (shortens final overall length); adjust pre-crimp to achieve OAL of 2 8/32" (2 9/32" for paper); where possible, lower final crimp tamp rod to achieve 3/32" crimp depth. #8 = This load requires zero wad pressure. #9 = This load duplicates Winchester's AA International loading. #10 = This load was a close match to Remington's former Rem-Lite factory load. #11 = This load is a close match to the Winchester Super-Lite factory loading. #12 = This load duplicates ballistics of Winchester's 3 1/4 dram equivalent Xpert loading. #13=This load duplicates ballistics of Winchester's 3 1/2 dram equivalent AA International Skeet loading. #14 = This load duplicates ballistics of Winchester's 2 dram equivalent Lite AA target loading. #15 = This load duplicates ballistics of Winchester's 3 dram equivalent Heavy AA target loading. #16 = This load duplicates ballistics of Winchester's 2 dram equivalent. AA Super-Lite target loading.

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
24 Gram Lead Shot								
Federal: Gold Medal Plastic Shells								
Fed. 209A	IMR 700-X	CB 1100-12	15.5/1150	16.5/1200	17.5/1250	19.5/1300	7,400 psi	
Fed. 209A	IMR 700-X	CB 2100-12	16.0/1160	17.0/1210	18.0/1260	19.5/1330	7,500 psi	
Fed. 209A	IMR 700-X	Fed. 12S0	16.0/1160	17.0/1205	18.0/1255	19.5/1325	7,800 psi	
Fed. 209A	IMR 700-X	Rem. TGT12	15.5/1145	16.5/1195	17.5/1245	19.5/1325	7,100 psi	
Fed. 209A	IMR 700-X	WAA12SL	15.5/1155	16.5/1205	17.5/1255	19.0/1325	7,800 psi	
Fed. 209A	IMR PB	CB 2118-12	20.0/1150	21.0/1190	22.5/1250	24.5/1330	6,900 psi	
Fed. 209A	IMR PB	Fed. 12S3	20.0/1155	21.0/1195	22.5/1260	24.0/1320	7,000 psi	
Fed. 209A	IMR PB	Rem. TGT12	20.0/1145	21.5/1205	23.0/1265	24.5/1325	6,700 psi	
Fed. 209A	IMR PB	WAA12SL	20.0/1155	21.0/1195	22.5/1250	24.5/1325	6,600 psi	
Fed. 209A	IMR SR-7625	CB 2100-12	24.0/1145	25.5/1205	26.5/1250	28.5/1325	5,000 psi	
Fed. 209A	IMR SR-7625	Fed. 12S0	23.5/1145	25.0/1205	26.5/1265	28.0/1320	5,400 psi	
Fed. 209A	IMR SR-7625	Rem. TGT12	24.0/1155	25.0/1195	26.5/1255	28.5/1335	5,400 psi	
Fed. 209A	IMR SR-7625	WAA12SL	23.5/1150	24.5/1190	25.5/1255	27.0/1320	5,600 psi	
Fed. 209A	Red Dot	Claybuster 1100-12				20.0/1345	8,700 psi	
Fed. 209A	Red Dot	Fed. 12S0				20.0/1345	8,900 psi	
Fed. 209A	Red Dot	Purple PC				19.5/1345	8,700 psi	
Fed. 209A	Red Dot	Rem. TGT12					8,900 psi	
Fed. 209A	Red Dot	WAA12L (gray)					9,000 psi	
Fed. 209A	American Select	Claybuster 1100-12				21.0/1345	8,000 psi	
Fed. 209A	American Select	Fed. 12S0				20.5/1345	7,900 psi	
Fed. 209A	American Select	Rem. TGT12				21.0/1345	8,100 psi	
Fed. 209A	American Select	WAA12L (gray)				21.5/1345	8,100 psi	
Rem. 209P	IMR 700-X	CB 1100-12	16.0/1140	17.5/1205	19.0/1250	21.0/1320	5,800 psi	
Rem. 209P	IMR 700-X	CB 2100-12	16.5/1140	18.0/1195	19.5/1265	21.0/1330	6,300 psi	
Rem. 209P	IMR 700-X	Fed. 12S0	16.5/1160	17.5/1205	18.5/1250	20.5/1340	7,300 psi	
Rem. 209P	IMR 700-X	Rem. TGT12	16.0/1150	17.0/1195	18.5/1250	21.0/1330	6,500 psi	
Rem. 209P	IMR 700-X	WAA12SL	16.0/1150	17.0/1205	18.0/1250	20.5/1325	6,600 psi	
Rem. 209P	IMR PB	CB 2118-12	21.0/1150	22.5/1205	24.0/1265	25.5/1330	6,100 psi	
Rem. 209P	IMR PB	Fed. 12S3	21.0/1160	22.0/1205	23.0/1250	25.0/1330	6,600 psi	
Rem. 209P	IMR PB	Rem. TGT12	21.0/1145	22.5/1200	24.0/1265	25.5/1330	6,000 psi	
Rem. 209P	IMR PB	WAA12SL	21.0/1140	22.5/1195	24.0/1255	25.5/1320	5,700 psi	
Win. 209	IMR 700-X	CB 1100-12	16.0/1155	17.0/1210	18.0/1260	19.5/1335	7,300 psi	
Win. 209	IMR 700-X	CB 2100-12	16.0/1160	17.0/1210	18.0/1260	19.5/1335	7,400 psi	
Win. 209	IMR 700-X	Fed. 12S0	15.5/1145	16.5/1195	17.5/1250	19.5/1330	7,800 psi	
Win. 209	IMR 700-X	Rem. TGT12	15.5/1150	16.5/1195	17.5/1245	19.5/1335	7,800 psi	
Win. 209	IMR 700-X	WAA12SL	15.5/1150	16.5/1200	17.5/1250	19.0/1320	7,500 psi	
Win. 209	IMR PB	CB 2118-12	20.5/1150	21.5/1195	23.0/1260	24.5/1320	6,600 psi	
Win. 209	IMR PB	Fed. 12S3	20.5/1145	22.0/1205	23.0/1250	24.5/1320	6,900 psi	
Win. 209	IMR PB	Rem. TGT12	20.5/1140	22.0/1200	23.5/1265	25.0/1325	6,300 psi	
Win. 209	IMR PB	WAA12SL	20.5/1145	21.5/1190	23.0/1255	25.0/1335	6,200 psi	
Win. 209	IMR SR-7625	CB 2100-12	25.0/1155	26.0/1195	27.5/1250	29.5/1320	4,600 psi	
Win. 209	IMR SR-7625	Fed. 12S0	24.5/1155	25.5/1200	27.0/1255	29.0/1330	5,200 psi	
Win. 209	IMR SR-7625	Rem. TGT12	24.5/1150	25.5/1195	27.0/1250	29.0/1330	4,900 psi	
Win. 209	IMR SR-7625	WAA12SL	24.5/1145	25.5/1195	27.0/1265	28.5/1335	5,400 psi	
Fiocchi: Plastic Target								
Fio. 616	Red Dot	Fed. 12S0				20.5/1345	8,700 psi	
Fio. 616	Red Dot	Rem. TGT12				20.5/1345	8,200 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Fiocchi: Plastic Target								
Fio. 616	American Select	Fed. 12S0				22.0/1345	7,800 psi	
Fio. 616	American Select	Purple PC				22.5/1345	6,900 psi	
Fio. 616	American Select	Rem. TGT12				22.0/1345	7,600 psi	
Fio. 616	American Select	WAA12L (gray)				22.0/1345	7,500 psi	
Remington: STS, Nitro 27 or Gun Cub Plastic Shells								
Fed. 209A	IMR 700-X	CB 1100-12	15.0/1155	16.0/1205	17.0/1255	18.5/1330	8,900 psi	
Fed. 209A	IMR 700-X	CB 2100-12	15.0/1155	16.0/1210	17.0/1260	18.5/1325	8,600 psi	
Fed. 209A	IMR 700-X	Fed. 12S0	15.0/1160	16.0/1210	17.0/1260	18.5/1325	9,200 psi	
Fed. 209A	IMR 700-X	Rem. TGT12	15.0/1160	16.0/1210	17.0/1265	18.5/1335	9,600 psi	
Fed. 209A	IMR 700-X	WAA12SL	14.5/1140	15.5/1195	16.5/1245	18.5/1335	10,000 psi	
Fed. 209A	IMR PB	CB 1100-12	18.0/1140	19.5/1205	20.5/1250	22.5/1330	7,800 psi	
Fed. 209A	IMR PB	Fed. 12S0	18.0/1140	19.5/1205	20.5/1250	22.5/1330	8,700 psi	
Fed. 209A	IMR PB	Rem. TGT12	18.0/1145	19.5/1205	20.5/1250	22.5/1330	7,800 psi	
Fed. 209A	IMR PB	WAA12SL	17.5/1155	18.5/1200	20.0/1265	21.5/1330	9,000 psi	
Fed. 209A	IMR SR-7625	CB 1100-12	21.5/1150	23.0/1210	24.0/1250	26.0/1330	6,500 psi	
Fed. 209A	IMR SR-7625	Fed. 12S0	21.5/1155	22.5/1200	24.0/1260	25.0/1325	7,300 psi	
Fed. 209A	IMR SR-7625	Rem. Fig.-8	22.0/1150	23.0/1195	24.5/1260	26.0/1320	6,800 psi	
Fed. 209A	IMR SR-7625	WAA12SL	20.5/1155	21.5/1195	23.0/1250	25.0/1320	7,500 psi	
Rem. 209P	IMR 700-X	CB 1100-12	15.5/1155	16.5/1210	17.5/1260	19.0/1335	8,400 psi	
Rem. 209P	IMR 700-X	CB 2100-12	15.0/1150	16.0/1200	17.0/1250	18.5/1330	8,600 psi	
Rem. 209P	IMR 700-X	Fed. 12S0	15.0/1150	16.0/1205	17.0/1260	18.5/1340	9,800 psi	
Rem. 209P	IMR 700-X	Rem. TGT12	15.0/1150	16.0/1200	17.0/1250	19.0/1335	8,700 psi	
Rem. 209P	IMR 700-X	WAA12SL	15.0/1155	16.0/1210	17.0/1255	18.5/1320	8,900 psi	
Rem. 209P	IMR PB	CB 1100-12	19.5/1140	21.0/1205	22.0/1250	24.0/1330	6,400 psi	
Rem. 209P	IMR PB	Fed. 12S0	19.0/1145	20.5/1210	21.5/1255	23.5/1335	7,700 psi	
Rem. 209P	IMR PB	Rem. TGT12	19.5/1155	20.5/1195	22.0/1260	23.5/1325	6,900 psi	
Rem. 209P	IMR PB	WAA12SL	18.5/1145	19.5/1195	21.0/1265	22.5/1325	8,000 psi	
Rem. 209P	IMR SR-7625	CB 1100-12	23.5/1145	25.0/1205	26.0/1265	27.5/1330	5,300 psi	
Rem. 209P	IMR SR-7625	Fed. 12S0	21.5/1140	23.0/1190	24.0/1250	26.0/1320	6,900 psi	
Rem. 209P	IMR SR-7625	Rem. Fig.-8	22.0/1150	23.5/1195	24.5/1255	26.5/1335	6,200 psi	
Rem. 209P	IMR SR-7625	WAA12SL	21.5/1150	23.0/1210	24.5/1250	26.0/1320	6,800 psi	
Rem. 209P	Red Dot	Claybuster 1100-12				20.5/1345	8,800 psi	
Rem. 209P	Red Dot	Fed. 12S0				20.0/1345	9,800 psi	
Rem. 209P	Red Dot	Purple PC				20.5/1345	8,300 psi	
Rem. 209P	Red Dot	Rem. TGT12				20.5/1345	9,200 psi	
Rem. 209P	Red Dot	WAA12L				20.5/1345	9,800 psi	
Rem. 209P	American Select	Claybuster 1100-12				20.5/1345	8,700 psi	
Rem. 209P	American Select	Fed. 12S0				20.5/1345	9,600 psi	
Rem. 209P	American Select	Purple PC				21.0/1345	8,100 psi	
Rem. 209P	American Select	Rem. TGT12				20.5/1345	8,500 psi	
Rem. 209P	American Select	WAA12L				20.5/1345	8,700 psi	
Win. 209	IMR 700-X	CB 1100-12	15.0/1140	16.0/1200	17.0/1250	18.5/1325	8,500 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: STS, Nitro 27 or Gun Cub Plastic Shells								
Win. 209	IMR 700-X	CB 2100-12	15.0/1145	16.0/1200	17.0/1255	18.5/1335	8,500 psi	
Win. 209	IMR 700-X	Fed. 12S0	15.0/1160	16.0/1215	17.0/1265	18.5/1335	9,400 psi	
Win. 209	IMR 700-X	Rem. TGT12	15.0/1155	16.0/1205	17.0/1260	18.5/1335	9,200 psi	
Win. 209	IMR 700-X	WAA12SL	15.0/1160	16.0/1210	17.0/1260	18.5/1335	9,700 psi	
Win. 209	IMR PB	CB 1100-12	19.0/1145	20.5/1205	21.5/1245	23.5/1330	6,400 psi	
Win. 209	IMR PB	Fed. 12S0	19.0/1145	20.5/1210	21.5/1250	23.5/1335	7,700 psi	
Win. 209	IMR PB	Rem. TGT12	19.0/1155	20.0/1200	21.0/1245	23.0/1330	7,300 psi	
Win. 209	IMR PB	WAA12SL	18.0/1140	19.5/1200	20.5/1245	22.5/1330	8,100 psi	
Win. 209	IMR SR-7625	CB 1100-12	23.0/1150	24.5/1190	25.5/1250	27.0/1330	5,700 psi	
Win. 209	IMR SR-7625	Fed. 12S0	22.5/1140	23.5/1195	24.5/1255	26.0/1335	6,900 psi	
Win. 209	IMR SR-7625	Rem. Fig.-8	22.5/1155	23.5/1190	24.5/1245	26.5/1320	6,500 psi	
Win. 209	IMR SR-7625	WAA12SL	21.0/1150	22.0/1195	23.0/1255	24.5/1330	7,300 psi	
Winchester: Compression-Formed AA Type Shells								
Fed. 209A	IMR 700-X	CB 1100-12	14.5/1140	15.5/1190	17.0/1260	18.5/1325	8,300 psi	#1
Fed. 209A	IMR 700-X	CB 2100-12	15.0/1160	16.0/1210	17.0/1260	18.5/1325	8,600 psi	#1
Fed. 209A	IMR 700-X	Fed. 12S0	15.0/1150	16.0/1200	17.0/1250	18.5/1325	9,000 psi	#1
Fed. 209A	IMR 700-X	Rem. TGT12	14.5/1140	16.0/1210	17.0/1255	18.5/1320	8,600 psi	#1
Fed. 209A	IMR 700-X	WAA12SL	14.5/1145	15.5/1195	17.0/1260	18.5/1320	9,100 psi	#1
Fed. 209A	IMR PB	CB 1100-12	18.5/1155	20.0/1205	21.0/1245	23.0/1320	6,600 psi	#1
Fed. 209A	IMR PB	Fed. 12S0	18.5/1150	19.5/1190	21.0/1250	23.0/1330	7,900 psi	#1
Fed. 209A	IMR PB	Rem. Fig.-8	18.0/1145	19.5/1200	21.0/1255	23.0/1325	7,200 psi	#1
Fed. 209A	IMR PB	WAA12SL	18.0/1160	19.0/1195	20.5/1255	22.5/1330	7,800 psi	#1
Fed. 209A	IMR SR-7625	CB 1100-12	22.5/1155	23.5/1195	25.0/1250	27.0/1335	5,500 psi	#1
Fed. 209A	IMR SR-7625	Fed. 12S0	22.0/1150	23.0/1195	24.5/1255	26.0/1320	6,400 psi	#1
Fed. 209A	IMR SR-7625	Rem. Fig.-8	22.0/1150	23.0/1195	24.5/1255	26.5/1330	6,200 psi	#1
Fed. 209A	IMR SR-7625	WAA12SL	21.0/1150	22.5/1200	24.0/1250	26.0/1330	6,400 psi	#1
Rem. 209P	IMR 700-X	CB 1100-12	16.0/1145	17.5/1200	19.0/1265	20.5/1335	6,400 psi	#1
Rem. 209P	IMR 700-X	CB 2100-12	15.0/1140	16.5/1200	18.0/1255	20.0/1325	6,300 psi	#1
Rem. 209P	IMR 700-X	Fed. 12S0	15.0/1150	16.5/1190	18.0/1250	19.5/1320	7,600 psi	#1
Rem. 209P	IMR 700-X	Rem. TGT12	15.5/1150	16.5/1190	18.0/1250	20.5/1325	6,800 psi	#1
Rem. 209P	IMR 700-X	WAA12SL	15.0/1140	16.5/1200	18.0/1265	19.5/1330	7,600 psi	#1
Rem. 209P	IMR PB	CB 1100-12	19.5/1155	20.5/1195	22.0/1250	24.5/1330	5,700 psi	#1
Rem. 209P	IMR PB	Fed. 12S0	19.5/1155	20.5/1200	22.0/1255	24.0/1325	6,800 psi	#1
Rem. 209P	IMR PB	Rem. Fig.-8	19.5/1150	20.5/1190	22.0/1255	23.5/1320	6,700 psi	#1
Rem. 209P	IMR PB	WAA12SL	18.5/1140	20.0/1195	21.5/1255	23.5/1335	7,200 psi	#1
Rem. 209P	IMR SR 7625	CB 1100-12	23.5/1150	25.0/1200	26.5/1250	28.0/1325	4,700 psi	
Rem. 209P	IMR SR 7625	Fed. 12S0	22.5/1150	24.0/1200	25.5/1250	27.0/1325	6,000 psi	
Rem. 209P	IMR SR 7625	Rem. Fig.-8	23.0/1150	24.0/1200	25.5/1250	27.5/1325	5,700 psi	
Rem. 209P	IMR SR 7625	WAA12SL	22.5/1150	24.0/1200	25.0/1250	27.0/1325	5,500 psi	
Win. 209	IMR 700-X	CB 1100-12	14.5/1135	15.5/1190	17.0/1260	18.5/1325	8,400 psi	#1
Win. 209	IMR 700-X	CB 2100-12	15.0/1140	16.0/1195	17.0/1250	18.5/1320	8,600 psi	#1
Win. 209	IMR 700-X	Fed. 12S0	14.5/1145	15.5/1195	17.0/1265	18.5/1325	9,300 psi	#1
Win. 209	IMR 700-X	Rem. TGT12	14.5/1140	16.0/1205	17.0/1250	18.5/1320	8,700 psi	#1
Win. 209	IMR 700-X	WAA12SL	14.5/1140	15.5/1190	17.0/1260	18.5/1325	9,100 psi	#1
Win. 209	IMR PB	CB 1100-12	19.0/1155	20.5/1205	22.0/1260	23.5/1325	6,300 psi	#1
Win. 209	IMR PB	Fed. 12S0	19.0/1155	20.0/1195	21.5/1260	23.0/1325	7,500 psi	#1
Win. 209	IMR PB	Rem. Fig.-8	19.0/1145	20.5/1200	22.0/1255	23.5/1320	6,800 psi	#1
Win. 209	IMR PB	WAA12SL	18.0/1145	19.5/1200	21.0/1260	22.5/1325	7,500 psi	#1
Win. 209	IMR SR 7625	CB 1100-12	23.5/1150	24.5/1200	26.0/1250	28.0/1325	5,000 psi	
Win. 209	IMR SR 7625	Fed. 12S0	22.0/1150	23.5/1200	25.0/1250	27.0/1325	6,200 psi	

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12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type Shells								
Win. 209	IMR SR 7625	Rem. Fig.-8	22.0/1150	23.0/1200	24.5/1250	26.5/1325	5,900 psi	
Win. 209	IMR SR 7625	WAA12SL	22.5/1150	23.5/1200	25.0/1250	27.0/1325	6,000 psi	
Win. 209	Red Dot	Claybuster 1100-12				20.0/1345	9,600 psi	
Win. 209	Red Dot	Fed. 12S0				20.0/1345	10,100 psi	
Win. 209	Red Dot	Purple PC				20.0/1345	9,000 psi	
Win. 209	Red Dot	Rem. TGT12				20.0/1345	9,600 psi	
Win. 209	Red Dot	WAA12L				20.0/1345	10,200 psi	
Win. 209	American Select	Claybuster 1100-12				20.0/1345	8,700 psi	
Win. 209	American Select	Fed. 12S0				20.0/1345	9,100 psi	
Win. 209	American Select	Purple PC				21.0/1345	8,100 psi	
Win. 209	American Select	Rem. TGT12				20.0/1345	8,600 psi	
Win. 209	American Select	WAA12L				20.0/1345	9,700 psi	
28 Gram Lead Shot								
Federal: Gold Medal Plastic								
Fed. 209A	Green Dot	Fed. 12S0				24.5/1345	9,100 psi	
Fed. 209A	Green Dot	Pat.Ctrl.Prpl.				25.0/1345	8,200 psi	
Fed. 209A	Green Dot	Rem. Fig.-8				25.0/1345	8,400 psi	
Fed. 209A	Green Dot	WAA12SL				24.5/1345	8,400 psi	
Fed. 209A	Red Dot	Fed. 12S0				23.0/1345	9,900 psi	
Fed. 209A	Red Dot	Pat.Ctrl.Prpl.				23.0/1345	8,800 psi	
Fed. 209A	Red Dot	Rem. Fig.-8				22.5/1345	9,500 psi	
Fed. 209A	Red Dot	WAA12SL				22.5/1345	9,600 psi	
Fed. 209A	Unique	Fed. 12S0				27.5/1345	7,400 psi	
Fiocchi: Purple Target (High Base Wad)								
Fio. 616	Green Dot	Fed. 12S3				24.0/1345	8,800 psi	
Fio. 616	Green Dot	Pat.Ctrl.Prpl.				24.0/1345	8,800 psi	
Fio. 616	Green Dot	Rem. Fig.-8				24.0/1345	8,800 psi	
Fio. 616	Green Dot	WAA12SL				24.0/1345	8,800 psi	
Fio. 616	Red Dot	Fed. 12S3				22.0/1345	9,600 psi	
Fio. 616	Red Dot	Pat.Ctrl.Prpl.				22.5/1345	9,500 psi	
Fio. 616	Red Dot	Rem. Fig.-8				21.5/1345	9,700 psi	
Fio. 616	Red Dot	WAA12SL				21.5/1345	10,400 psi	
Fio. 616	Unique	Rem. Fig.-8				26.5/1345	7,500 psi	
Fio. 616	Unique	WAA12SL				27.0/1345	7,700 psi	
Remington: Premier & Nitro 27 & STS								
Rem. 209P	Green Dot	Fed. 12S3				23.0/1345	10,300 psi	
Rem. 209P	Green Dot	Pat.Ctrl.Prpl.				24.0/1345	9,900 psi	
Rem. 209P	Green Dot	Rem. Fig.-8				23.0/1345	9,700 psi	
Rem. 209P	Green Dot	WAA12SL				23.0/1345	10,100 psi	
Rem. 209P	Red Dot	Pat.Ctrl.Prpl.				21.5/1345	10,600 psi	
Rem. 209P	Red Dot	Rem. Fig.-8				21.5/1345	10,600 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums.

12-GAUGE-2.75"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington: Premier & Nitro 27 & STS								
Rem. 209P	Unique	Pat.Ctrl.Prpl.				27.0/1345	7,800 psi	
Rem. 209P	Unique	Rem. Fig.-8				26.0/1345	8,300 psi	
Rem. 209P	Unique	WAA12SL				27.0/1345	8,500 psi	
Winchester: Compression-Formed AA Type								
Win. 209	Green Dot	Pat.Ctrl.Prpl.				23.0/1345	9,500 psi	
Win. 209	Green Dot	Rem. Fig.-8				22.5/1345	10,600 psi	
Win. 209	Unique	Fed. 12S3				25.5/1345	9,500 psi	
Win. 209	Unique	Pat.Ctrl.Prpl.				26.5/1345	8,700 psi	
Win. 209	Unique	Rem. Fig.-8				25.0/1345	9,600 psi	
Win. 209	Unique	WAA12SL				25.5/1345	10,200 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-3″

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
1 1/4 Ounce Lead Shot								
Ballistic Products Multi-Hull 12 3A.1								
Ch. 209	IMR PB	LB12-2				30.0/1395	11,400 psi	COS12 overshot
Ballistic Products Multi-Hull 12 3A								
M209	HS-6	Two AirWedge + 38C12 (3/8 HCW)				31.0/1200	10,000 psi	COS12 overshot
M209	HS-6	Two X12X + 122-2412 (1/4″ CORK12)				31.0/1200	9,900 psi	COS12 overshot
M209	IMR SR-7625	Two X12X + 38C12 (3/8″ HCW)				31.0/1340	11,200 psi	COS12 overshot
M209	IMR SR-4756	Two X12X + 122-2412 (1/4″ CORK12)				34.0/1285	11,100 psi	COS12 overshot
M209	Longshot	STS + 18CW20 (in wad base)				31.0/1280	10,000 psi	OSC: Buffer Org. 10 gr.
M209	Blue Dot	CLBC				35.0/1180	9,300 psi	OSC: Buffer Org. 10 gr.
M209	Longshot	Two X12X + BP12				32.0/1300	10,700 psi	OSC: Buffer Org. 10 gr.
Federal: Plastic Shells (Paper Base Wad)								
Fed. 209	IMR 800-X	Fed. 12S3				33.0/1420	9,700 LUP	#1
Fed. 209	IMR PB	Fed. 12S4				31.0/1365	10,300 LUP	
Fed. 209	IMR SR-7625	WAA12				37.0/1440	9,400 LUP	
Win. 209	IMR PB	WAA12				33.0/1400	10,400 LUP	
Win. 209	IMR SR-7625	Fed. 12S4				37.0/1470	10,900 LUP	
Winchester: Compression-Formed AA Type								
Fed. 209	IMR SR-7625	Rem. RXP12				32.0/1375	10,300 LUP	
Fed. 209	IMR SR-7625	WAA12				33.0/1400	10,400 LUP	
Win. 209	IMR PB	Rem. RXP12				28.0/1310	10,100 LUP	
Win. 209	IMR PB	WAA12				29.0/1325	9,800 LUP	

Load Notes: 1 = Add one 20-gauge, 0.135″ card inside bottom of shotcup.

1 3/8 Ounce Lead Shot								
Federal: One-Piece Plastic Hunting								
Fed. 209	Blue Dot	Fed. 12S3				40.5/1295	7,900 psi	
Fed. 209	Blue Dot	Rem. RXP12				42.0/1350	8,000 psi	
Fed. 209	Blue Dot	WAA12		38.0/1295	41.0/1325	44.0/1350	9,900 psi	
Fed. 209	Herco	Fed. 12S3				31.0/1295	10,500 psi	
Fed. 209	Herco	Rem. RXP12				32.0/1295	10,100 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-3"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: One-Piece Plastic Hunting								
Fed. 209	IMR 800-X	Fed. 12S3		29.5/1295	30.8/1325	32.0/1355	10,000 LUP	
Fed. 209	IMR 800-X	Fed. 12S3				26.5/1200	7,000 LUP	#!
Fed. 209	IMR SR-4756	Rem. SP12				42.0/1460	10,400 LUP	
Fed. 209	IMR SR-4756	WAA12R				43.0/1480	10,800 LUP	
Fed. 209	IMR SR-4756	Fed. 12S4				35.0/1375	10,600 LUP	
Fed. 209	IMR SR-4756	Rem. R12H				35.0/1370	10,000 LUP	
Fed. 209A	Blue Dot	Fed. 12S4				40.0/1350	9,400 psi	
Fed. 209A	Blue Dot	Rem. RXP12				38.0/1295	9,000 psi	
Fed. 209A	Blue Dot	Rem. SP12				40.0/1350	8,900 psi	
Fed. 209A	Blue Dot	WAA12F114				40.0/1350	9,800 psi	
Fed. 209A	Blue Dot	WAA12				38.0/1295	8,800 psi	
Fed. 209A	Herco	Fed. 12S3				30.5/1295	10,000 psi	
Fed. 209A	Herco	Rem. RXP12				30.5/1295	9,300 psi	
Fed. 209A	Herco	WAA12				30.5/1295	9,700 psi	
Win.209	IMR PB	Fed. 12S4				29.0/1265	10,500 LUP	
Win.209	IMR PB	WAA12				30.0/1275	10,500 LUP	
Fiocchi: Plastic (Low Base Wad)								
CCI 209M	Blue Dot	Fed. 12S3				37.0/1295	9,000 psi	
CCI 209M	Blue Dot	Fed. 12S4				38.0/1350	10,400 psi	
CCI 209M	Herco	Fed. 12S3				30.0/1295	10,000 psi	
Fio. 616	Herco	Fed. 12S3				31.5/1295	9,100 psi	
Fio. 616	Herco	Fed. 12S4				32.0/1350	10,700 psi	
Fio. 616	Herco	Fiocchi FTW1				31.0/1295	9,200 psi	
Fio. 616	Herco	Rem. RXP12				32.5/1295	8,600 psi	
Fio. 616	Herco	Rem. SP12				32.5/1350	10,100 psi	
Fio. 616	Herco	WAA12		31.5/1295	32.0/1325	32.5/1350	10,700 psi	
Win. 209	Blue Dot	Fed. 12S3				37.5/1295	8,800 psi	
Win. 209	Blue Dot	Fed. 12S4				38.5/1350	10,100 psi	
Win. 209	Herco	Fed. 12S3				29.5/1295	10,600 psi	
Remington: SP (Separate Black Plastic Base Wad)								
CCI 209M	Blue Dot	Fed. 12S3				42.0/1350	8,400 psi	
CCI 209M	Blue Dot	Rem. RXP12				42.5/1350	8,000 psi	
CCI 209M	Blue Dot	WAA12				42.0/1350	8,500 psi	
CCI 209M	Herco	Fed. 12S3				29.5/1295	10,000 psi	
CCI 209M	Herco	Rem. RXP12				30.0/1295	9,200 psi	#1
CCI 209M	Herco	WAA12				30.0/1295	10,000 psi	#1
Rem. 209P	HS-6	Rem. R12L				37.0/1295	9,400 LUP	
Rem. 209P	HS-6	WAA12				36.0/1295	9,900 LUP	
Rem. 209P	Solo 1500	Rem. SP12				39.0/1350	9,300 LUP	
Remington: Unibody (Integral Plastic Base Wad)								
Win. 209	Alliant 2400	Fed. 12S3				37.0/1295	9,300 psi	
Win. 209	Alliant 2400	Fed. 12S4				38.0/1350	9,300 psi	
Win. 209	Alliant 2400	Rem. RXP12		37.5/1295	38.0/1325	38.5/1350	9,900 psi	
Win. 209	Alliant 2400	WAA12F114				38.0/1350	10,500 psi	
Win. 209	Alliant 2400	WAA12				36.5/1295	9,400 psi	
Win. 209	Alliant 2400	WAA12SL				35.5/1295	10,100 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-3"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type								
Fed. 209	HS-6	Rem. R12L				35.0/1295	9,400 LUP	
Fed. 209	IMR SR-4756	Rem. SP12				36.0/1365	10,600 LUP	
Fed. 209	IMR SR-4756	WAA12F114				36.0/1380	10,800 LUP	
Fed. 209	IMR SR-4756	Fed. 12S4				29.0/1260	10,800 LUP	
Fed. 209	IMR SR-4756	Rem. RXP12				31.0/1310	10,700 LUP	
Win. 209	Blue Dot	Fed. 12S3				37.5/1295	10,300 psi	
Win. 209	Blue Dot	Fed. 12S4				40.0/1350	10,500 psi	
Win. 209	Blue Dot	Rem. RXP12				38.0/1295	9,400 psi	
Win. 209	Blue Dot	Rem. SP12				40.5/1350	9,300 psi	
Win. 209	Blue Dot	WAA12F114				39.0/1350	9,900 psi	
Win. 209	Blue Dot	WAA12				37.5/1295	10,000 psi	
Win. 209	HS-6	WAA12				35.5/1295	9,400 LUP	
Win. 209	IMR SR-7625	WAA12				31.0/1290	10,000 LUP	
Win. 209	W 540	Rem. R12L				35.5/1295	9,500 LUP	
Win. 209	W 540	WAA12				35.0/1295	9,500 LUP	
	Load Notes: 1 = Add one 20-gauge, 0.135" card inside bottom of shotcup.							
1 1/2 Ounce Lead Shot								
Federal: One-Piece Plastic Hunting								
Fed. 209	Blue Dot	Fed. 12S3				40.0/1315	9,700 psi	
Fed. 209	Blue Dot	Rem. SP12				40.0/1315	9,000 psi	
Fed. 209	Blue Dot	WAA12F114				42.0/1315	9,800 psi	
Federal: Plastic (Paper Base Wad)								
CCI 209M	IMR 800-X	WAA12				30.0/1285	10,600 LUP	
Fed. 209	IMR 800-X	Fed. 12S3		27.5/1215	28.8/1250	30.0/1285	10,600 LUP	
Fed. 209	IMR SR-4756	Rem. SP12			33.5/1300	38.0/1350	10,600 LUP	
Fed. 209	IMR SR-4756	WAA12R	33.0/1250			39.0/1365	10,700 LUP	
Fed. 209	IMR SR-4756	Fed. 12S4				31.0/1235	10,100 LUP	
Fed. 209A	IMR SR-4756	WAA12		37.0/1300			10,400 psi	
Fed. 209A	Blue Dot	Fed. 12S3				38.0/1315	9,700 psi	
Fed. 209A	Blue Dot	Rem. RXP12				38.5/1315	9,600 psi	
Fed. 209A	Blue Dot	WAA12				37.5/1295	9,800 psi	
Rem. 209P	IMR SR-4756	Rem. RP12		37.0/1300			9,100 psi	
Rem. 209P	IMR SR-4756	WAA12R		37.0/1300			9,600 psi	
Rem. 209P	IMR 800-X	Fed. 12S4		31.0/1300			10,600 psi	
Rem. 209P	IMR 800-X	Rem. R12H			33.0/1350		10,600 psi	
Win.209	IMR SR-4756	WAA12F114				33.0/1275	10,400 LUP	
Win.209	IMR 800-X	Fed. 12S4	29.0/1250				10,600 psi	
Win.209	IMR 800-X	Rem. R12H		30.0/1300			10,500 psi	
Fiocchi: Plastic (Low Base Wad)								
CCI 209M	Blue Dot	Fed. 12S4				38.0/1315	10,400 psi	
Fio. 616	Blue Dot	Fed. 12S4				39.0/1315	10,300 psi	
Fio. 616	Blue Dot	Rem. SP12				39.0/1315	9,700 psi	
Fio. 616	Blue Dot	WAA12F114				39.0/1315	9,400 psi	
Win. 209	Blue Dot	Fed. 12S4				39.0/1315	10,600 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-3"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Remington/Peters: Plastic Game								
Win. 209	IMR SR-7625	Rem. RXP12	34.0/1275				10,600 psi	
Win. 209	IMR SR-7625	Rem. SP12	33.5/1275				10,700 psi	
Win. 209	IMR SR-4756	Rem. SP12			38.5/1325		10,500 psi	
Win. 209	IMR 800-X	Rem. SP12		30.5/1300			10,600 psi	
Win. 209	IMR 800-X	WAA12	29.5/1275				10,800 psi	
Remington: Unibody (Integral Plastic Base Wad)								
CCI 209M	Blue Dot	Fed. 12S4				39.5/1315	9,800 psi	#1
CCI 209M	Blue Dot	Rem. SP12				40.0/1315	9,400 psi	#1
CCI 209M	Blue Dot	WAA12F114				39.5/1315	9,800 psi	#1
CCI 209M	Alliant 2400	Rem. SP12				37.0/1315	10,700 psi	
Winchester: Compression-Formed AA Type								
Fed. 209	IMR SR-4756	Rem. SP12				34.0/1290	10,900 LUP	
Fed. 209	IMR SR-4756	WAA12R				33.0/1255	10,700 LUP	
Win. 209	Blue Dot	Rem. SP12				38.5/1315	10,300 psi	
Win. 209	IMR SR-4756	Rem. SP12				29.0/1210	10,000 LUP	
Win. 209	IMR SR-4756	WAA12F114				29.0/1205	10,200 LUP	

Load Notes: 1 = Add one 20-gauge, 0.135" card inside bottom of shotcup.

1 5/8 Ounce Lead Shot								
Federal: One-Piece Plastic Hunting								
Fed. 209A	Blue Dot	Fed. 12S4				40.0/1280	10,100 psi	
Fed. 209A	Blue Dot	Rem. SP12				40.0/1280	9,400 psi	
Fed. 209A	Blue Dot	WAA12F114				40.0/1280	10,000 psi	
Federal: Plastic (Paper Base Wad)								
CCI 209M	IMR 800-X	Lage Uniwad				28.5/1205	10,000 LUP	
Fed. 209	IMR 800-X	Fed. 12S4				28.0/1200	10,700 LUP	
Fed. 209	IMR SR-4756	Rem. SP12				36.0/1280	10,900 LUP	
Fed. 209	IMR SR-4756	WAA12R				36.0/1275	10,400 LUP	
Fed. 209	IMR SR-7625	Rem. RP12				32.0/1215	10,500 LUP	
Fed. 209A	Blue Dot	Rem. SP12				39.0/1280	10,400 psi	
Fed. 209A	HS-7	Fed. 12S0				39.0/1250	10,800 psi	
Fed. 209A	HS-7	Fiocchi TL1				38.0/1250	10,400 psi	
Rem. 209P	IMR SR-4756	Rem. RP12				34.5/1250	10,800 psi	
Rem. 209P	IMR SR-4756	WAA12R				35.5/1250	10,900 psi	
Rem. 209P	IMR 800-X	Rem. RP12		28.0/1200			10,800 psi	
Rem. 209P	IMR 800-X	WAA12R		27.5/1200			10,900 psi	
Win.209	IMR SR-7625	WAA12R				32.0/1220	10,500 LUP	
Win.209	IMR SR-7625	Rem. RP12				36.0/1250	10,800 psi	
Win.209	IMR 800-X	Rem. RP12			29.0/1225		10,900 psi	
Win.209	IMR 800-X	WAA12R			28.5/1225		11,000 psi	
Fiocchi: Plastic (Low Base Wad)								
Fio. 616	Blue Dot	Fed. 12S4				39.0/1280	10,700 psi	
Fio. 616	Blue Dot	Rem. SP12				39.5/1280	9,700 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-3"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Fiocchi: Plastic (Low Base Wad)								
Fio. 616	Blue Dot	WAA12F114				38.5/1280	10,500 psi	
Remington/Peters: Plastic Game								
Fed. 209A	IMR SR-4756	Rem. RP12	30.5/1150				10,900 psi	
Fed. 209A	IMR SR-4756	WAA12R	30.0/1200				11,000 psi	
Fed. 209A	IMR 800-X	Rem. R12H	25.5/1150				10,900 psi	
Fed. 209A	IMR 800-X	WAA12R	25.5/1150				10,900 psi	
Rem. 209P	IMR SR-4756	Rem. RP12			34.0/1250		10,900 psi	
Rem. 209P	IMR SR-4756	WAA12R			34.0/1250		10,900 psi	
Rem. 209P	IMR 800-X	Rem. SP12		28.0/1200			10,900 psi	
Rem. 209P	IMR 800-X	WAA12R		27.5/1200			10,800 psi	
Win. 209	IMR SR-4756	Rem. RP12			33.5/1250		10,800 psi	
Win. 209	IMR SR-4756	WAA12R			35.0/1250		11,000 psi	
Win. 209	IMR 800-X	Rem. SP12		28.0/1200			10,800 psi	
Win. 209	IMR 800-X	WAA12R		28.0/1200			10,800 psi	
Remington: SP (Separate Black Plastic Base Wad)								
CCI 209M	Blue Dot	Fed. 12S4				38.5/1280	10,200 psi	
CCI 209M	Blue Dot	Rem. SP12				39.0/1280	9,800 psi	
CCI 209M	Blue Dot	WAA12F114				38.5/1280	10,500 psi	
Rem. 209P	Solo 1500	Rem. RP12				37.5/1280	10,900 LUP	
Winchester: Compression-Formed AA Type								
Fed. 209	IMR SR-4756	WAA12R			32.0/1200		10,400 LUP	
Fed. 209	IMR SR-4756	Rem. RP12			33.0/1200		10,900 psi	
Fed. 209	IMR 800-X	Rem. RXP12			28.5/1200		11,000 psi	
Fed. 209	IMR 800-X	WAA12			28.0/1200		10,800 psi	
Rem. 209P	IMR SR-4756	Rem. RP12				35.5/1300	10,900 psi	
Rem. 209P	IMR SR-4756	WAA12R				37.5/1300	11,000 psi	
Rem. 209P	IMR 800-X	Rem. RXP12			31.5/1250		11,000 psi	
Rem. 209P	IMR 800-X	WAA12			30.0/1250		10,900 psi	
Win. 209	Alliant 2400	Rem. RP12				50.0/1335	10,000 psi	
Win. 209	HS-7	Rem. 12H				35.0/1205	10,200 LUP	
Win. 209	HS-7	WAA12				36.0/1205	10,400 LUP	
Win. 209	IMR SR-4756	Rem. RP12				32.0/1200	10,300 LUP	
Win. 209	W 571	Rem. R12H				36.0/1200	10,100 LUP	
Win. 209	W 571	WAA12				36.0/1205	10,500 LUP	
Win. 209	IMR 800-X	Rem. RXP12			30.5/1250		11,000 psi	
Win. 209	IMR 800-X	WAA12			30.5/1250		11,000 psi	
1 3/4 Ounce Lead Shot								
Federal: One-Piece Plastic Hunting								
Fed. 209A	Blue Dot	Rem.RP12				39.0/1245	10,500 psi	
Federal: Plastic (Paper Base Wad)								
CCI 209M	IMR 800-X	Lage Uniwad				26.5/1120	10,600 LUP	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-3"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Plastic (Paper Base Wad)								
Fed. 209	IMR 800-X	Fed. 12S4				25.5/1105	10,500 LUP	
Fed. 209	IMR 800-X	WAA12R	25.5/1150				10,700 psi	
Fed. 209	IMR SR-4756	Rem. RP12				33.0/1180	10,800 LUP	
Fed. 209	IMR SR-4756	WAA12R				33.0/1175	10,600 LUP	
Fed. 209A	Blue Dot	Rem. RP12				39.0/1245	10,500 psi	
Rem. 209P	IMR 800-X	Rem. RP12		28.0/1175			10,500 psi	
Rem. 209P	IMR 800-X	WAA12R		28.0/1175			10,600 psi	
Win. 209	IMR 800-X	Rem. RP12	27.5/1150				10,600 psi	
Win. 209	IMR 800-X	WAA12R		27.5/1175			10,800 psi	
Remington: SP (Separate Black Plastic Base Wad)								
CCI 209M	Blue Dot	Rem. RP12				38.5/1245	10,700 psi	
Winchester: Compression-Formed AA Type								
CCI 209	IMR SR-4756	Rem. RP12				31.0/1135	10,000 LUP	
CCI 209	IMR SR-4756	WAA12R				31.0/1140	10,300 LUP	
Win. 209	Alliant 2400	Rem. RP12				45.0/1245	9,900 psi	
1 7/8 Ounce Lead Shot								
Federal: One-Piece Plastic Hunting								
Fed. 209A	Blue Dot	Rem.RP12				36.5/1155	9,900 psi	
Federal: Plastic (Paper Base Wad)								
Fed. 209	IMR SR-4756	WAA12R			31.0/1110	33.0/1140	10,600 LUP	
Fed. 209A	Blue Dot	Rem. RP12				34.0/1155	10,500 psi	
Fed. 209A	Blue Dot	Rem. SP12				36.0/1155	10,300 psi	
Fed. 209A	HS-7	Fed. 12S3				33.0/1155	11,400 psi	
Fed. 209A	HS-7	WAA12				34.0/1155	10,600 psi	
Win. 209	HS-7	Fed. 12S3				33.0/1155	9,400 psi	
Win. 209	HS-7	Fiocchi TL1				33.0/1155	10,600 psi	
Fiocchi: Plastic (Low Base Wad)								
CCI 209M	HS-7	Rem. R12H				30.5/1100	10,400 psi	
Fio. 616	Blue Dot	Rem. RP12				34.5/1155	10,700 psi	
Fio. 616	HS-7	Rem. Fig.-8				34.0/1155	10,400 LUP	
Win. 209	HS-7	Rem. R12H				31.0/1100	10,600 psi	
Remington: SP (Separate Black Plastic Base Wad)								
CCI 157	W571	Rem. RP12				36.0/1140	10,500 LUP	
CCI 157	W571	WAA12R				36.0/1140	10,700 psi	
CCI 209M	Blue Dot	Rem. RP12				34.0/1155	10,300 psi	
Rem. 209P	HS-7	Rem. RP12				36.0/1140	10,700 LUP	
Rem. 209P	HS-7	WAA12R				36.0/1140	10,800 LUP	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-3″

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type								
Fed. 209	HS-7	Rem. RP12				34.0/1100	10,400 LUP	
Win. 209	HS-7	WAA12R				33.5/1100	10,600 LUP	
Win. 209	W571	Rem. RP12				34.0/1100	10,100 LUP	
Win. 209	W571	WAA12R				33.0/1100	10,500 LUP	

12-GAUGE-3.5″

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum	Maximum	Maximum Pressure	Load Notes
1 1/2 Ounce Lead Shot						
Federal						
Fed. 209A	Blue Dot	BW12+TPS1275		34.0/1235	9,300 psi	
1 5/8 Ounce Lead Shot						
Federal						
CCI 209	Blue Dot	(2)BPGS+(2)14 WF12+TR12		36.5/1230	11,500 psi	
1 7/8 Ounce Lead Shot						
Federal: One-Piece Plastic Hunting						
CCI 209M	Blue Dot	Fed. 12SO		41.0/1200	9,100 psi	#1
CCI 209M	Blue Dot	Fed. 12SO		43.0/1255	9,800 psi	
CCI 209M	Blue Dot	Rem. R12L		40.5/1200	9,600 psi	#2
CCI 209M	Blue Dot	Rem. R12L		42.5/1255	10,100 psi	#1
CCI 209M	Blue Dot	WAA12SL		41.0/1200	8,900 psi	#1
CCI 209M	Blue Dot	WAA12SL		43.0/1255	9,500 psi	
CCI 209M	HS-7	Fed. 12SO		42.0/1250	10,700 psi	#3
CCI 209M	HS-7	WAA12SL		42.5/1250	11,200 psi	#3
Fed. 209A	HS-7	Fed. 12SO		42.0/1250	11,600 psi	#3
Win. 209	Blue Dot	Fed. 12SO		40.0/1200	9,000 psi	#1
Win. 209	Blue Dot	Fed. 12SO		42.5/1250	10,100 psi	
Win. 209	HS-7	Fed. 12SO		42.5/1250	10,500 psi	#3
Win. 209	HS-7	WAA12SL		42.0/1250	10,500 psi	#3
Remington: Plastic						
CCI 209M	Blue Dot	Fed. 12SO		38.0/1200	10,100 psi	#1
CCI 209M	Blue Dot	Fed. 12SO		39.0/1255	10,600 psi	#1
CCI 209M	Blue Dot	Rem. R12L		38.0/1200	10,300 psi	#1
CCI 209M	Blue Dot	Rem. R12L		39.0/1255	10,900 psi	#1
CCI 209M	Blue Dot	WAA12SL		38.0/1200	10,000 psi	#1
CCI 209M	Blue Dot	WAA12SL		39.0/1255	10,400 psi	#1
CCI 209M	HS-7	Fed. 12SO		42.0/1250	11,700 psi	
Fed. 209	HS-7	Fed. 12SO		41.0/1250	12,400 psi	
Win. 209	Blue Dot	Rem. R12L		37.5/1200	10,500 psi	#1
Win. 209	Blue Dot	Rem. R12L		38.5/1255	11,000 psi	#1
Win. 209	HS-7	Fed. 12SO		41.5/1250	11,600 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-3.5"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum	Powder Charge (grains)/Velocity (fps) Maximum	Maximum Pressure	Load Notes
Winchester: Polyformed (Separate Plastic Base Wad)						
CCI 209M	Blue Dot	WAA12SL		38.0/1200	10,100 psi	
CCI 209M	Blue Dot	WAA12SL		39.5/1255	10,500 psi	
CCI 209M	HS-7	Fed. 12S0		42.0/1250	11,000 psi	
Fed. 209A	HS-7	Fed. 12S0		41.0/1250	11,900 psi	
Win. 209	Blue Dot	Fed. 12S0		38.5/1200	10,600 psi	
Win. 209	Blue Dot	Fed. 12S0		40.5/1255	10,700 psi	
Win. 209	Blue Dot	Rem. 12L		38.5/1200	10,300 psi	#1
Win. 209	Blue Dot	Rem. 12L		40.0/1255	10,700 psi	#1
Win. 209	Blue Dot	WAA12SL		38.5/1200	10,000 psi	
Win. 209	Blue Dot	WAA12SL		40.0/1255	10,800 psi	
Win. 209	HS-7	Fed. 12S0		41.5/1250	10,500 psi	

Load Notes: #1 = Add one 20-gauge, 0.135" card inside bottom of shotcup. #2 = Add two 20-gauge, 0.135" card inside bottom of shotcup. #3 = Add three 20-gauge, 0.135" card inside bottom of shotcup.

2 Ounce Lead Shot						
Federal: One-Piece Plastic Hunting						
CCI 209M	Blue Dot	Fed. 12S0		42.5/1220	10,000 psi	
CCI 209M	Blue Dot	Rem. R12L		42.0/1220	10,000 psi	
CCI 209M	Blue Dot	WAA12SL		42.5/1220	9,800 psi	
CCI 209M	HS-7	Fed. 12S0		41.5/1220	10,600 psi	#1
CCI 209M	HS-7	WAA12SL		42.0/1220	11,500 psi	#1
Fed. 209A	HS-7	Fed. 12S0		41.0/1200	11,600 psi	#1
Fed. 209A	HS-7	WAA12SL		40.0/1200	11,500 psi	#1
Win. 209	Blue Dot	Fed. 12S0		41.0/1220	9,900 psi	
Win. 209	Blue Dot	Fed. 12S0		42.0/1200	10,600 psi	#1
Win. 209	HS-7	WAA12SL		42.5/1200	10,700 psi	#1
Win. 209	Blue Dot	MM1235		37.0/1240	13,200 psi	
Remington: Plastic						
CCI 209M	Blue Dot	Fed. 12S0		39.5/1220	10,800 psi	
CCI 209M	Blue Dot	Rem. R12L		39.5/1220	11,100 psi	
CCI 209M	Blue Dot	WAA12SL		39.0/1220	10,700 psi	
CCI 209M	HS-7	Rem. RXP12		40.0/1200	11,500 psi	#1
CCI 209M	HS-7	WAA12SL		39.5/1200	10,900 psi	
Fed. 209	HS-7	WAA12SL		39.0/1200	12,100 psi	
Win. 209	Blue Dot	Rem. R12L		39.0/1220	11,200 psi	
Win. 209	HS-7	WAA12SL		38.5/1200	12,100 psi	
Winchester: Polyformed (Separate Plastic Base Wad)						
CCI 209M	Blue Dot	WAA12SL		39.0/1220	11,200 psi	
CCI 209M	HS-7	Fed. 12S0		39.0/1200	11,000 psi	
Fed. 209A	HS-7	WAA12SL		39.0/1200	12,200 psi	
Fed. 209A	HS-7	Fed. 12S0		39.0/1200	11,200 psi	
Win. 209	Blue Dot	Fed. 12S0		40.5/1220	11,000 psi	
Win. 209	Blue Dot	Rem. 12L		39.0/1220	10,600 psi	
Win. 209	Blue Dot	WAA12SL		40.0/1220	11,200 psi	
Win. 209	HS-7	Fed. 12S0		39.0/1200	10,700 psi	
Win. 209	HS-7	WAA12SL		39.0/1200	10,700 psi	#2

Load Notes: #1 = Add one 20-gauge, 0.135" card inside bottom of shotcup. #2 = Add one 28-gauge, 0.040" card inside bottom of shotcup.

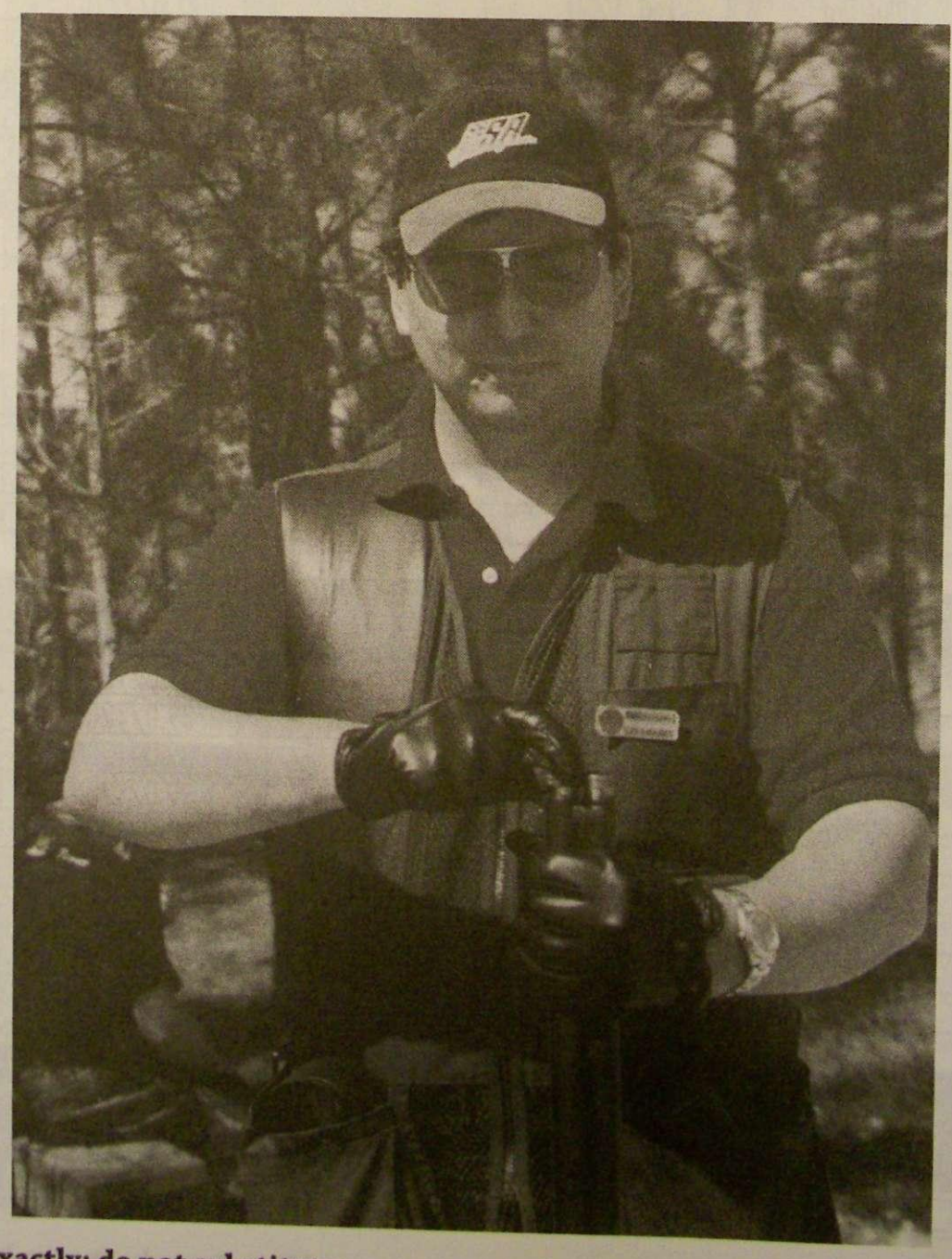
2 1/4 Ounce Lead Shot						
Federal: One-Piece Plastic Hunting						
CCI 209M	Blue Dot	Fed. 12S4		38.5/1150	11,100 psi	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

12-GAUGE-3.5"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum	Powder Charge (grains)/Velocity (fps) Maximum	Maximum Pressure	Load Notes
Federal: One-Piece Plastic Hunting						
CCI 209M	Blue Dot	Rem. SP12		39.5/1150	11,200 psi	
CCI 209M	Blue Dot	WAA12F114		38.5/1150	11,100 psi	
CCI 209M	HS-7	Fed. 12S4		38.5/1150	11,800 psi	#1
CCI 209M	HS-7	Pat.Ctrl.Prpl.		41.5/1150	9,200 psi	
Fed. 209A	HS-7	Fed. 12S4		39.0/1150	12,500 psi	#1
Win. 209	Blue Dot	Fed. 12S4		38.0/1150	10,900 psi	
Win. 209	HS-7	Fed. 12S4		40.0/1150	12,600 psi	#1
Win. 209	HS-7	Pat.Ctrl.Prpl.		41.0/1150	9,100 psi	
Remington: Plastic						
CCI 209M	Blue Dot	Fed. 12S4		37.0/1150	11,100 psi	
CCI 209M	Blue Dot	Rem. SP12		38.0/1150	11,100 psi	
Fed. 209	HS-7	Rem. SP12		36.5/1150	11,900 psi	#!
Win. 209	Blue Dot	Rem. SP12		38.0/1150	11,500 psi	
Win. 209	HS-7	Rem. SP12		38.5/1150	11,000 psi	#1
Winchester: Polyformed (Separate Plastic Base Wad)						
CCI 209M	HS-7	Rem. SP12		39.0/1150	12,000 psi	#1
Win. 209	Blue Dot	Rem. SP12		37.0/1150	11,200 psi	
Win. 209	HS-7	WAA12F114		38.0/1150	12,900 psi	

Load Notes: #1 = Add one 20-gauge, 0.135" card inside bottom of shotcup.



"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

10-GAUGE LOAD DATA

10-GAUGE-2.85"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum	Powder Charge (grains)/Velocity (fps) Maximum	Maximum Pressure	Load Notes
1 1/4 Ounce Lead Shot						
Federal						
CCI 209	Herco	X10X + DeciMax + 1/4" 12 ga. cork filler		30.0/1240	7,050 psi	OSC & Roll Crimp
CCI 209	IMR PB	X10X + DeciMax + 1/4" 12 ga. cork filler		30.0/1230	7,670 psi	OSC & Roll Crimp
Fed. 209A	Unique	X10X + DeciMax + 1/4" 12 ga. cork filler		30.0/1130	7,070 psi	OSC & Roll Crimp
Fed. 209A	Universal	X10X + DeciMax + 1/4" 12 ga. cork filler		30.0/1290	8,940 psi	OSC & Roll Crimp
1 3/8 Ounce Lead Shot						
Federal						
CCI 209	IMR 800-X	X10X + DeciMax + 1/8" 12 ga. cork filler		30.0/1260	8,550 psi	OSC & Roll Crimp
CCI 209	Universal	X10X + DeciMax + 1/8" 12 ga. cork filler		30.0/1220	8,740 psi	OSC & Roll Crimp

10-GAUGE-3.5"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum	Powder Charge (grains)/Velocity (fps) Maximum	Maximum Pressure	Load Notes
1 1/4 Ounce Lead Shot						
Federal						
Fed. 209A	Red Dot	Two X10X + DECIMAX + 1/8 cork 20		24.0/1200	9,100 psi	OSC
Federal: Plastic (Paper Base Wad)						
CCI 209M	Green Dot	Rem. SP10		29.5/1265	8,300 psi	#1
Win. 209	Green Dot	Rem. SP10		29.0/1265	8,800 psi	#1
Remington: Unibody (Integral Plastic Base Wad)						
CCI 209M	Green Dot	Rem. SP10		28.5/1265	8,800 psi	#1
CCI 209M	Unique	Rem. SP10		31.0/1265	7,500 psi	#1
Win. 209	Green Dot	Rem. SP10		29.0/1265	8,800 psi	#1
Win. 209	Unique	Rem. SP10		31.0/1265	7,600 psi	#1

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

10-GAUGE-3.5"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/Velocity (fps) Minimum	Powder Charge (grains)/Velocity (fps) Maximum	Maximum Pressure	Load Notes
Winchester: Polyformed (Separate Plastic Base Wad)						
CCI 209	Green Dot	Rem. SP10		28.0/1265	8,500 psi	#2
Win. 209	Green Dot	Rem. SP10		28.5/1265	8,600 psi	#2
	Load Notes: #1 = Add six 20-gauge, 0.135" cards inside bottom of shotcup. #2 = Add five 20-gauge, 0.135" cards inside bottom of shotcup.					
1 3/8 Ounce Lead Shot						
Federal						
Fed. 209A	IMR PB	Two X10X + DECIMAX		31.0/1300	9,300 psi	OSC
Fed. 209A	IMR PB	Two X10X + DECIMAX		33.0/1290	9,500 psi	OSC
Fed. 209A	Unique	Two X10X + DECIMAX		34.0/1350	9,600 psi	OSC
Fed. 209A	IMR PB	X10X + DECIMAX		31.0/1280	9,100 psi	OSC
1 1/2 Ounce Lead Shot						
Federal						
CCI 209	IMR SR-4756	BPD10 + three felt 12 (1412) inserted		49.0/1500	10,900 psi	OSC
Fed. 209A	IMR SR-4756	MM1035 + two 14F12		44.0/1390	10,700 psi	OSC
Fed. 209A	Herco	X10X + .135NC10 + DeciMax		36.0/1320	9,700 psi	OSC
Fed. 209A	IMR SR-7625	X10X + .135NC10 + DeciMax		36.0/1285	9,500 psi	OSC
Fed. 209A	IMR SR-7625	X10X + .135NC10 + DeciMax		40.0/1395	10,300 psi	OSC
Federal: Plastic (Paper Base Wad)						
Fed. 209	IMR 700-X	Rem. SP10		29.5/1230	9,900 LUP	#1
Winchester: Polyformed (Separate Plastic Base Wad)						
Win. 209	IMR 700-X	H. Versalite		29.0/1215	9,900 LUP	#2
Win. 209	IMR 700-X	Rem. SP10		29.0/1215	9,600 LUP	#2
	Load Notes: #1 = Add five 20-gauge, 0.135" cards inside bottom of shotcup. #2 = Add four 20-gauge, 0.135" cards inside bottom of shotcup.					
1 5/8 Ounce Lead Shot						
Federal						
Fed. 209A	IMR SR-4756	X10X + DeciMax		44.0/1360	9,900 psi	OSC
Fed. 209A	Longshot	X10X + NC10 + DeciMax		44.0/1485	10,500 psi	OSC
Fed. 209A	Blue Dot	MM1035 + two 14F12		44.5/1340	10,300 psi	OSC
Win. 209	Blue Dot	BPD10 + two 1/4 WF20		50.0/1300	9,300 psi	OSC
Federal: Plastic (Paper Base Wad)						
CCI 209M	Blue Dot	Rem. SP10		45.0/1285	8,000 psi	#1
CCI 209M	Herco	Rem. SP10		36.0/1285	10,300 psi	#1
Fed. 209	IMR PB	Rem. SP10		37.5/1295	9,800 LUP	#2
Fed. 209	Solo 1500	Rem. SP10		53.0/1430	10,900 LUP	
Win. 209	Blue Dot	Rem. SP10		45.5/1285	8,300 psi	#1

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

10-GAUGE-3.5"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum	Powder Charge (grains)/ Velocity (fps) Maximum	Maximum Pressure	Load Notes
Remington: SP (Separate Yellow Plastic Base Wad)						
CCI 209M	Blue Dot	Rem. SP10		43.5/1285	8,500 psi	#1
Rem. 209P	Solo 1500	Rem. SP10		52.0/1430	10,900 LUP	
Remington: SP (Separate Yellow Plastic Base wad)						
Win. 209	Blue Dot	Rem. SP10		44.0/1285	8,500 psi	#1
Winchester						
Win. 209	W571	BPD10 + three 1/4 WF20		57.0/1430	10,250 psi	OSC
Winchester: Polyformed (Separate Plastic Base Wad)						
CCI 209M	Blue Dot	Rem. SP10		44.5/1285	8,700 psi	#2
CCI 209M	Herco	Rem. SP10		35.5/1285	10,400 psi	#2
Win.209	Blue Dot	Rem. SP10		45.0/1285	8,800 psi	#2
Win.209	Solo 1500	Rem. SP10		53.0/1430	10,900 LUP	

Load Notes: #1 = Add four 20-gauge, 0.135" cards inside bottom of shotcup. #2 = Add three 20-gauge, 0.135" cards inside bottom of shotcup.

1 3/4 Ounce Lead Shot						
Federal						
Fed. 209A	Longshot	X10X + DeciMax		42.0/1375	10,400 psi	OSC
Fed. 209A	Blue Dot	MM1035 + two 14F12		42.0/1300	10,800 psi	OSC
1 7/8 Ounce Lead Shot						
Federal						
Fed. 209A	Longshot	X10X + NC10 + DeciMax		40.0/1340	10,200 psi	OSC
Federal: Plastic (Paper Base Wad)						
CCI 209M	Blue Dot	Rem. SP10		45.5/1270	9,900 psi	#1
Fed. 209	IMR SR-7625	Rem. SP10		41.0/1260	9,700 LUP	#2
Win. 209	Blue Dot	Rem. SP10		45.5/1270	10,200 psi	#1
Remington: Unibody (Integral Plastic Base Wad)						
CCI 209M	Blue Dot	Rem. SP10		44.0/1270	9,800 psi	#1
Win. 209	Blue Dot	Rem. SP10		44.5/1270	9,100 psi	#1
Winchester						
Fed. 209A	IMR SR-4756	BPD10 + 1/8 WF20		42.0/1220	9,700 psi	OSC
Winchester: Polyformed (Separate Plastic Base Wad)						
CCI 209M	Blue Dot	Rem. SP10		45.0/1270	9,800 psi	#2
Fed. 209	IMR PB	H. Versatlite		37.5/1200	9,700 LUP	#3
Fed. 209	IMR PB	Rem. SP10		39.0/1220	10,000 LUP	
Win. 209	Blue Dot	Rem. SP10		45.5/1270	10,200 psi	#2

Load Notes: #1 = Add three 20-gauge, 0.135" cards inside bottom of shotcup. #2 = Add two 20-gauge, 0.135" cards inside bottom of shotcup. #3 = Add one 20-gauge, 0.135" card inside bottom of shotcup.

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

10-GAUGE-3.5"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum	Powder Charge (grains)/ Velocity (fps) Maximum	Maximum Pressure	Load Notes
2 Ounce Lead Shot						
Federal						
Fed. 209A	Longshot	X10X + DeciMax		36.0/1290	11,000 psi	OSC
Win. 209	IMR 800-X	BPD10 + 14F12		32.0/1235	11,000 psi	OSC
Federal: Plastic (Paper Base Wad)						
CCI 209M	Blue Dot	Rem. SP10		43.5/1210	9,200 psi	#1
CCI 209M	HS-6	Rem. SP10		40.0/1165	9,900 psi	#1
CCI 209M	HS-7	Rem. SP10		43.0/1165	10,200 psi	#1
CCI 209M	IMR 800-X	BP BPD		32.5/1200	9,800 LUP	#2
Fed. 209A	IMR SR 4756	Rem. SP10		37.0/1175	10,800 psi	#8
Fed. 209A	IMR 800-X	Rem. SP10		32.0/1175	10,900 psi	#9
Fed. 209	Solo 1500	Rem. SP10		44.0/1210	10,900 LUP	
Fed. 209	IMR SR-4756	Rem. SP10		46.5/1300	9,800 LUP	
Rem. 209P	IMR SR 4756	Rem. SP10		41.5/1225	10,800 psi	#8
Win. 209	Blue Dot	Rem. SP10		44.0/1210	9,400 psi	#1
Win. 209	IMR 800-X	BP BPD		32.5/1195	9,900 LUP	#2
Win. 209	IMR 800-X	Rem. SP10		34.5/1190	9,800 LUP	#3
Remington: SP (Separate Yellow Plastic Base Wad)						
CCI 209M	HS-6	Rem. SP10		40.0/1165	11,000 psi	#3
CCI 209M	HS-7	Rem. SP10		43.0/1165	11,000 psi	#3
CCI 209M	Blue Dot	Rem. SP10		42.0/1210	10,400 psi	#1
Rem. 209P	Solo 1500	Rem. SP10		43.0/1210	10,900 LUP	
Rem. 209P	IMR SR 4756	Rem. SP10		39.5/1200	10,800 psi	#8
Rem. 209P	IMR 800-X	Rem. SP10		30.0/1150	10,900 psi	#9
Win. 209	Blue Dot	Rem. SP10		42.5/1210	10,100 psi	#1
Win. 209	IMR SR 4756	Rem. SP10		42.0/1250	10,700 psi	#10
Win. 209	IMR 800-X	Rem. SP10		35.0/1250	10,800 psi	#8
Winchester: Polyformed (Separate Plastic Base Wad)						
CCI 209M	Blue Dot	Rem. SP10		43.0/1210	9,400 psi	#4
CCI 209M	HS-6	Rem. SP10		40.0/1165	10,700 psi	#1
CCI 209M	HS-7	Rem. SP10		42.5/1165	10,600 psi	#1
CCI 209M	IMR 800-X	BP BPD		34.5/1200	9,700 LUP	#5
CCI 209M	IMR 800-X	H. Versalite		37.5/1215	9,300 LUP	#1
CCI 209M	IMR 800-X	Rem. SP10		37.0/1215	8,700 LUP	#4
Fed. 209	IMR PB	H. Versalite		35.0/1120	9,900 LUP	#4
Fed. 209	IMR PB	Rem. SP10		36.0/1155	10,000 LUP	
Win. 209	Blue Dot	Rem. SP10		43.5/1210	9,500 psi	#4
Win. 209	IMR 800-X	BP BPD		34.5/1250	10,000 LUP	#5
Win. 209	IMR 800-X	H. Versalite		36.5/1205	9,600 LUP	#1
Win. 209	IMR 800-X	Rem. SP10		36.5/1215	9,700 LUP	#4
Win. 209	Solo 1500	Rem. SP10		44.0/1210	10,900 LUP	
Win. 209	IMR SR-475	Rem. SP10		48.5/1305	9,900 LUP	
Win. 209	IMR SR-7625	H. Versalite		40.0/1210	9,700 LUP	
Win. 209	IMR SR-7625	Rem. SP10		41.0/1230	10,000 LUP	
Win. 209	W 540	Pacific P		44.0/1210	8,600 LUP	#6
Win. 209	W 540	Rem. SP10		44.0/1210	8,700 LUP	#7

Load Notes: #1 = Add two 20-gauge, 0.135" cards inside bottom of shotcup. #2 = Add two 20-gauge, 1/2" fiber wads inside bottom of shotcup. #3 = Add three 20-gauge, 0.125" cards inside bottom of shotcup. #4 = Add one 20-gauge, 0.135" card inside bottom of shotcup. #5 = Add one 20-gauge, 1/2" fiber wad and one 0.135" card in bottom of shotcup. #6 = Add one 20-gauge, 3/8" fiber filler in bottom of shotcup. #7 = Add one 20-gauge, 1/2" fiber wad and one 0.135" card in bottom of shotcup. #6 = Add one 20-gauge, 3/8" fiber filler in bottom of shotcup. #7 = Add one 16-gauge, 1/4" fiber filler in bottom of shotcup. #8 = Add two 20-gauge, 0.125" cards inside bottom of shotcup. #9 = Add four 20-gauge, 0.125" cards inside bottom of shotcup. #10 = Add one 20-gauge 0.125" card inside bottom of shotcup.

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

10-GAUGE-3.5"

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum	Powder Charge (grains)/ Velocity (fps) Maximum	Maximum Pressure	Load Notes
2 Ounce Lead Shot						
Federal						
Win. 209	W571	X10X + NC10 + 14C10		44.0/1150	8,900 psi	OSC
Federal: Plastic (Paper Base Wad)						
Fed. 209	IMR SR-4756	Rem. SP10		44.0/1230	10,000 LUP	
Winchester: Polyformed (Separate Plastic Base Wad)						
Win. 209	IMR SR-4756	Rem. SP10		45.0/1240	9,800 LUP	
Win. 209	IMR SR-7625	H. Versalite		39.5/1165	9,900 LUP	
Win. 209	IMR SR-7625	Rem. SP10		38.5/1155	9,900 LUP	
2 1/4 Ounce Lead Shot						
Federal: Plastic (Paper Base Wad)						
CCI 209	IMR SR-4756	H. Versalite		42.5/1180	10,000 LUP	
CCI 209M	Blue Dot	Rem. SP10		42.0/1165	9,800 psi	#1
Fed. 209	IMR SR-4756	H. Versalite		40.5/1155	9,900 LUP	
Fed. 209	IMR SR-4756	Rem. SP10		41.0/1160	9,700 LUP	
Win. 209	Blue Dot	Rem. SP10		42.5/1165	10,200 psi	#1
Win. 209	HS-7	Rem. SP10		41.0/1165	10,300 psi	#1
Remington: SP (Separate Yellow Plastic Base Wad)						
CCI 209M	Rem. SP10	Blue Dot		41.5/1165	10,500 psi	
Win. 209	Rem. SP10	Blue Dot		42.0/1165	10,500 psi	
Win. 209	HS-7	Rem. SP10		40.0/1165	10,800 psi	#2
Win. 209	IMR SR 4756	Rem. SP10		37.0/1150	11,000 psi	
Win. 209	IMR 800-X	Rem. SP10		32.0/1150	10,900 psi	
Remington: Unibody (Integral Plastic Base Wad)						
CCI 209M	Blue Dot	Rem. SP10		40.5/1165	10,400 psi	
Win. 209	Blue Dot	Rem. SP10		41.0/1165	10,500 psi	
Winchester: Polyformed (Separate Plastic Base Wad)						
CCI 209M	Blue Dot	Rem. SP10		41.5/1165	10,500 psi	
CCI 209M	HS-7	Rem. SP10		40.0/1165	11,000 psi	#1
Win. 209	Blue Dot	Rem. SP10		42.0/1165	10,500 psi	
Win. 209	IMR SR-4756	Rem. SP10		42.5/1175	10,000 LUP	
Win. 209	W 571	H. Versalite		48.0/1210	10,000 LUP	
Win. 209	W 571	Rem. SP10		47.0/1210	9,900 LUP	

Load Notes: #1 = Add one 20-gauge, 0.135" cards inside bottom of shotcup. #2 = Add two 20-gauge, 0.135" cards inside bottom of shotcup.

2 3/8 Ounce Lead Shot						
Federal: Plastic (Paper Base Wad)						
Fed. 209	IMR SR-4756	H. Versatile		37.5/1150	9,600 LUP	
Fed. 209	IMR SR-4756	Rem. SP10		38.0/1125	10,000 LUP	
Win. 209	IMR SR-4756	H. Versatile		38.5/1155	9,800 LUP	

"Caution: Follow load recipes exactly; do not substitute components, exceed listed maximums or load less than listed minimums."

Chapter 17

STEEL SHOT DATA

STEEL

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
10 Gauge 3 1/2": 1 1/4 Ounce Steel Shot								
Federal								
CCI 209M	Blue Dot	MM1035 + two 14WF20				46.0/1335	9,000 psi	OSC
CCI 209M	HS-7	MM1035 + two 14WF20				50.0/1430	10,600 psi	OSC
Win. 209	W571	BPD10T + two 14WF20				49.0/1365	10,600 psi	OSC
Win. 209	W571	BPD10T + two14WF20				50.0/1420	10,500 psi	OSC
Win. 209	IMR SR-4756	MM1035 + two 14WF20				40.0/1385	10,000 psi	OSC
Win. 209	HS-7	NC10 + BPD10T + two 14WF20				45.5/1355	10,300 psi	OSC
Win. 209	IMR SR-4756	NC10 + BPD10T + two 14WF20				38.0/1330	10,200 psi	OSC
Win. 209	Blue Dot	NC10 + BPD10T + 14WF20				46.0/1385	10,300 psi	OSC
Remington								
CCI 209M	IMR SR-4756	MM1035 + two 14WF20				34.5/1325	11,000 psi	OSC
Win. 209	W571	MM1035 + two 14WF20				45.0/1325	10,400 psi	OSC
Remington (yellow plastic base wad)								
Fed. 209A	Steel	Prec. Reloading TUFW105				50.0/1590	9,800 psi	
Winchester								
Win. 209	Blue Dot	BPD10T + two 14WF20				48.0/1365	10,300 psi	OSC
Win. 209	IMR 800-X	MM1035 + two14WF20				33.0/1360	10,700 psi	OSC
Win. 209	Blue Dot	MM1035 + two 14WF20				45.0/1355	10,300 psi	OSC
Win. 209	IMR 800-X	NC10 + BPD10T + two 14WF20				45.0/1345	10,400 psi	OSC

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STEEL

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
10 Gauge 3 1/2": 1 3/8 Ounce Steel Shot								
Federal								
CCI 209M	HS-7	NC10 + MM1035				39.5/1240	10,300 psi	OSC
CCI 209M	Blue Dot	MM1035 + 14WF20				44.0/1325	10,900 psi	OSC
Win. 209	HS-7	NC10 + BPD10T + 14WF20				41.0/1265	10,600 psi	OSC
Win. 209	W571	NC10 + BPD10T + 14WF20				44.0/1210	10,100 psi	OSC
Remington								
Fed. 209A	Steel	MM1035 + 14WF20				46.0/1535	10,100 psi	OSC
Remington: Plastic SP								
Fed. 209A	Steel	Prec. Reloading TUFW105				43.5/1475	10,000 psi	
Fed. 209A	Steel	Ballistic Prod.s mm10312				46.0/1535	10,100 psi	
Fed. 209A	Steel	Reloading Spec.s "SAM 1"				48.0/1555	10,300 psi	
Winchester: Polyformed								
Fed. 209A	Steel	Reloading Spec.s "SAM 1"				45.5/1538	10,200 psi	
Winchester								
Win. 209	Blue Dot	MM1035 + 14WF20				44.0/1280	10,900 psi	OSC
10 Gauge 3 1/2": 1 1/2 Ounce Steel Shot								
Remington: Plastic SP								
Fed. 209A	Steel	MM1035 + 18WF20				39.0/1385	10,100 psi	OSC
Fed. 209A	Steel	Prec. Reloading TUFW105				37.5/1345	10,300 psi	
Fed. 209A	Steel	Ballistic Prod.s mm10312				39.0/1385	10,100 psi	
Fed. 209A	Steel	Reload. Spec. "SAM 1"				45.0/1470	10,100 psi	
Rem. 209P	Blue Dot	BPD10T + 18WF20				44.0/1395	10,500 psi	OSC
Winchester: Polyformed								
Fed. 209A	Steel	Reloading Spec.s "SAM 1"				41.0/1415	9,900 psi	
10 Gauge 3 1/2": 1 5/8 Ounce Steel Shot								
Fed. 209A	Steel	MM1035				37.0/1310	10,100 psi	OSC

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STEEL

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
12 Gauge 2 3/4": 7/8 Ounce Steel Shot								
Ballistic Products Multi-Hull 12 2A								
M209	Blue Dot	STS + 1/8 WF20				33.0/1200	7,800 psi	
M209	HS-6	STS + 1/8 WF20				35.0/1405	9,800 psi	
M209	IMR SR-4756	STS + 1/8 WF20				32.5/1350	8,600 psi	
CCI 209M	IMR SR-4756	STS + 1/8 WF20				32.5/1445	10,000 psi	
CCI 209M	HS-6	STS + 1/8 WF20				35.0/1465	9,800 psi	
Federal Gold Medal								
Fed. 209A	Herco	BPGS + BP12T				26.0/1460	10,300 psi	
Fed. 209A	IMR SR-4756	BPGS + BP12T				29.0/1535	10,300 psi	
Fed. 209A	Green Dot	STS				18.0/1215	8,800 psi	
Fed. 209A	Steel	Reload. Spec. "SAM 1"				42.0/1700	7,800 psi	
Fed. 209A	Steel	Ballistic Prod.s mm12234				45.0/1765	9,000 psi	
Win. 209	IMR SR-4756	STS				30.0/1410	9,225 psi	
Fiocchi								
CCI 209M	Herco	RP12				24.0/1310	11,000 psi	
Winchester: Compression-Formed AA Type								
CCI 209M	Universal	BP STS	18.6/1200	19.8/1250	20.1/1275	20.5/1300	10,300 psi	
Win. 209	Universal	BP STS	19.0/1200	20.0/1250	20.6/1275	21.2/1300	11,000 psi	
12 Gauge 2 3/4": 1 Ounce Steel Shot								
Ballistic Products Multi-Hull 12 2A								
M209	IMR SR-7625	Ranger + 1/8 WF20				27.5/1325	10,900 psi	
Federal Field								
Fed. 209A	Blue Dot	BPGS + BP12T				35.0/1400	8,600 psi	
Win. 209	IMR SR-4756	RP12				26.0/1400	9,000 psi	
Federal: Gold Medal Plastic								
CCI 209SC	Universal	BP CSD-100	20.5/1200	21.0/1250	21.5/1275	22.0/1300	10,900 psi	
Fed. 209A	Universal	BP CSD-100	19.5/1200	20.0/1250	21.0/1275	22.0/1300	11,000 psi	
Fed. 209A	Universal	BP STS	21.5/1200	22.0/1250	22.2/1275	22.5/1300	11,400 psi	
Fed. 209M	Steel	MM1275 + 1/8 WF20				33.0/1480	9,500 psi	
Fed. 209A	Steel	Prec. Reload. TUFW12				37.0/1500	8,000 psi	
Fed. 209A	Steel	Reload. Spec. "SAM 1"				36.0/1520	9,200 psi	
Win. 209	HS-7	BPGS + BP12T				39.0/1550	11,300 psi	
Federal: Plastic (Paper Base Wad)								
Fed. 209	Solo 1500	BP12234				29.5/1275	10,900 LUP	

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STEEL

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Fiocchi: Purple Target (High Base Wad)								
Fio. 616	Universal	BP CSD-100				18.7/1200	10,600 psi	
Fio. 616	Universal	BP STS	21.5/1200	22.0/1250	22.5/1275	23.0/1300	10,600 psi	
Win. 209	Universal	BP CSD-100				19.0/1200	10,900 psi	
Remington: Premier & Nitro 27 & STS								
CCI 209M	Universal	BP STS	21.0/1200	21.5/1250	21.7/1275	22.0/1300	11,000 psi	
CCI 209SC	Universal	BP STS				19.5/1200	10,100 psi	
Fed. 209A	Steel	Prec. Reload. TUFW12				35.5/1520	10,800 psi	
Fed. 209A	Steel	Reload. Spec. "SAM 1"				35.5/1546	10,300 psi	
Rem. 209P	Solo 1500	BP 12234				27.5/1275	10,800 LUP	
Win. 209	Universal	BP STS				19.5/1200	10,800 psi	
Winchester: Compression-Formed AA Type								
CCI 209M	Universal	BP STS	20.5/1200	20.7/1225	20.8/1235	21.0/1250	10,500 psi	
CCI 209M	Universal	BP STS				19.0/1200	11,000 psi	
Rem. 209P	Universal	BP STS				18.8/1200	10,600 psi	
Win. 209	Solo 1500	BP 12234				27.5/1275	10,900 LUP	
Win. 209	Universal	BP CSD-100				19.0/1200	10,900 psi	
Win. 209	Universal	BP STS	20.7/1200	21.3/1250	21.9/1275	22.5/1300	11,000 psi	
12 Gauge 2 3/4": 1 1/8 Ounce Steel Shot								
Federal: Plastic (Paper Base Wad)								
Fed. 209	Solo 1500	BP 12234				28.0/1200	10,900 LUP	
Federal: Gold Medal								
Fed. 209A	Steel	LBC43			34.0/1470		8,700 psi	
Fed. 209A	HS-7	MM1275			33.5/1320		11,300 psi	
Fiocchi								
Fio. 616	HS-6	RP12				30.0/1350	11,300 psi	
Remington: Premier & Nitro 27 & STS								
Fed. 209A	Steel	Prec. Reload. TUFW12				29.5/1361	10,400 psi	
Fed. 209A	Steel	Reload. Spec. "SAM 1"				32.5/1428	10,400 psi	
Rem. 209P	Solo 1500	BP Ranger Plus				35.0/1350	10,900 LUP	
Winchester: Compression-Formed AA Type								
Win. 209	Solo 1500	BP Ranger Plus				34.5/1350	10,900 LUP	
12 Gauge 3": 1 Ounce Steel Shot								
Federal								

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STEEL

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal								
Fed. 209A	IMR SR-4756	BPGS + RP12 + 18WF20				30.0/1320		
Fed. 209A	Steel	MM1230 + two 14WF20				45.0/1690	10,500 psi	
Fed. 209A	Blue Dot	RP12				40.0/1455		
Fed. 209A	Steel	Prec. Reload. TUFW12				44.0/1660	9,400 psi	
Fed. 209A	Steel	Reload. Spec. "SAM 1"				47.0/1720	8,900 psi	
Federal: Hi-Power 7/16 Base Wad								
Fed. 209A	Steel	Ballistic Prod. mm12300				45.0/1665	8,900 psi	
Fed. 209A	Steel	Reload. Sped. "SAM 1"				48.0/1700	8,200 psi	
Remington								
Rem. 209P	Blue Dot	RP12				39.0/1485		
12 Gauge 3": 1 1/8 Ounce Steel Shot								
Federal: 0.090 Integral Base Wad								
Fed. 209A	Steel	Ballistic Prod. mm12300				37.0/1720	10,400 psi	
Fed. 209A	Steel	Prec. Reload. TUFW12				38.0/1515	10,900 psi	
Fed. 209A	Steel	Reload. Spec. "SAM 1"				40.5/1580	10,700 psi	
Federal								
Fed. 209A	Steel	MM1230+(2)18WF20				33.0/1390	10,900 psi	
Win. 209	Blue Dot	RP12				37.0/1370	10,700 psi	
Remington: Nitro Steel								
Fed. 209A	Steel	Ballistic Prod. mm12300				33.5/1440	10,800 psi	
Fed. 209A	Steel	Prec. Reload. TUFW12				35.0/1457	10,700 psi	
Fed. 209A	Steel	Reload. Spec. "SAM 1"				33.0/1479	10,600 psi	
12 Gauge 3": 1 1/4 Ounce Steel Shot								
Federal: 0.090 Integral Base Wad								
Fed. 209A	Steel	Prec. Reload. TUFW12				33.0/1355	10,500 psi	
Fed. 209A	Steel	Ballistic Prod. mm12300				33.0/1370	10,500 psi	
Fed. 209A	Steel	Reload. Spec. "SAM 1"				37.0/1455	10,800 psi	
Federal: Hi-Power 7/16 Base Wad								
Fed. 209A	Steel	Ballistic Prod. mm12300				33.0/1390	10,900 psi	

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STEEL

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Hi-Power 7/16 Base Wad								
Fed. 209A	Steel	Reload. Spec. "SAM 1"				36.0/1430	10,500 psi	
Remington: Nitro STEEL								
Fed. 209A	Steel	Prec. Reload. TUFW12				32.0/1392	10,700 psi	
12 Gauge 3 1/2": 1 1/4 Ounce Steel Shot								
Federal								
Fed. 209A	Blue Dot	BPGS+RP12				39.5/1355	13,700 psi	
Fed. 209A	Steel	MM1235 + three 1/8 WF20				45.0/1560	10,900 psi	
Fed. 209A	Steel	Reload. Spec. "SAM 1"				45.0/1510	10,400 psi	
Fed. 209A	Steel	Ballistic Prod. Mm12312				45.0/1560	10,900 psi	
Fed. 209A	Steel	Prec. Reload. TUFW12				45.0/1565	10,700 psi	
Remington: Plastic SP								
Fed. 209A	Steel	Reload. Spec. "SAM 1"				45.0/1595	13,100 psi	
Fed. 209A	Steel	Ballistic Prod. Mm12312				45.0/1615	13,300 psi	
12 Gauge 3 1/2": 1 3/8 Ounce Steel Shot								
Federal								
CCI 209	Blue Dot	MM1235 + three 1/8 WF20				38.0/1335	10,100 psi	
Fed. 209A	Steel	MM1235 + three 1/8 WF20				37.0/1430	12,800 psi	
Fed. 209A	Steel	Prec. Reload. TUFW1235				40.0/1470	12,500 psi	
Fed. 209A	Steel	Ballistic Prod. Mm12312				41.5/1485	12,600 psi	
Remington								
Fed. 209A	Steel	MM1235 + three 1/8 WF20				37.0/1430	12,800 psi	
Fed. 209A	Steel	Reload. Spec. "SAM 1"				38.5/1430	12,800 psi	
12 Gauge 3 1/2": 1 1/2 Ounce Steel Shot								
Federal: Integral Base Wad								
Fed. 209A	Steel	Prec. Reload. TUFW1235				36.0/1360	12,600 psi	
Fed. 209A	Steel	Ballistic Prod. Mm12312				37.0/1385	12,800 psi	

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STEEL

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Integral Base Wad								
Fed. 209A	Steel	Reload. Spec. "SAM 1"				39.0/1390	13,300 psi	
Remington								
Fed. 209A	Steel	MM1235 + three 1/8 WF20				37.0/1385	13,800 psi	
Fed. 209A	Steel	Ballistic Prod. Mm12312				33.0/1305	13,000 psi	
Fed. 209A	Steel	Reload. Spec. "SAM 1"				35.0/1330	13,000 psi	
16 Gauge 2 3/4": 7/8 Ounce Steel Shot								
Ballistic Products: Multi-Hull 16 2A.1								
Ch. 209P	IMR HS-6	MM16 (#2221680)				25.5/1320	11,300 psi	OSC
M209	IMR HS-6	MM16 + 18CW20 (in base wad)				24.0/1330	11,400 psi	OSC
Win. 209	IMR HS-6	MM16				24.5/1335	11,000 psi	
Win. 209	IMR HS-6	MM16				24.0/1340	11,100 psi	Mix47 (12gr)
Win. 209	IMR SR-4756	MM16				24.0/1330	10,700 psi	
Win. 209	IMR SR-4756	MM16				23.5/1335	10,900 psi	Mix47 (12gr)
Win. 209	Blue Dot	MM16				28.5/1335	10,200 psi	
Win. 209	Longshot	MM16				23.5/1350	11,400 psi	
Cheddite								
Fio. 616	IMR HS-6	MM16				24.5/1350	11,400 psi	
Fio. 616	IMR SR-4756	MM16				24.0/1335	11,000 psi	
Fio. 616	Blue Dot	MM16				28.0/1325	10,300 psi	
Fiocchi								
Fio. 616	Blue Dot	MM16 (#2221680)				28.0/1325	9,900 psi	OSC
Fio. 616	IMR HS-7	MM16 (#2221680)				27.0/1360	11,200 psi	OSC
Fio. 616	IMR HS-6	MM16				25.0/1345	11,250 psi	
Fio. 616	IMR HS-6	MM16				24.5/1345	11,300 psi	Mix47 (12gr)
Fio. 616	IMR SR-4756	MM16				23.5/1330	10,500 psi	
Fio. 616	IMR SR-4756	MM16				23.0/1330	10,500 psi	Mix47 (12gr)
20 Gauge 2 3/4": 3/4 Ounce Steel Shot								
Fiocchi: Plastic								
Fio. 616	Alliant 2400	BP CS12D20		28.0/1200	29.5/1255	30.0/1285	11,400 psi	
Remington: RXP								
Rem. 209P	Blue Dot	BP CS12D20		19.5/1270	20.0/1300	20.5/1330	12,000 psi	
Winchester: Compression-Formed AA Type								
Rem. 209P	Blue Dot	BP CS12D20			19.5/1275	20.0/1300	12,000 psi	

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Chapter 18

BISMUTH SHOT DATA

BISMUTH & HEVI-SHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
BISMUTH								
10 Gauge 2.85": 1 1/2 Ounce Bismuth Shot								
Federal								
Fed. 209A	Blue Dot	DECIMAX + 18F12				40.0/1200	7,900 psi	OSC, Roll Crimp
Fed. 209A	IMR SR-4756	DECIMAX + 18F12				38.0/1215	8,400 psi	OSC, Roll Crimp
10 Gauge 3 1/2": 1 1/2 Ounce Bismuth Shot								
Remington								
Rem. 209P	IMR SR-4756	NC10 + BPD10				37.5/1240	9,600 psi	OSC
Rem. 209P	IMR SR-4756	NC10 + MM1035				35.0/1240	9,400 psi	OSC
10 Gauge 3 1/2": 1 7/8 Ounce Bismuth Shot								
Federal: One-Piece								
Fed. 209A	HS-7	Rem. SP10				42.0/1225	10,900 psi	
Remington: SP (Separate Yellow Plastic Base wad)								
Win. 209	HS-7	Rem. SP10				43.0/1250	10,600 psi	
Winchester: Polyformed (Separate Plastic Base Wad)								
Win. 209	HS-7	Rem. SP-10				45.0/1275	11,000 psi	
10 Gauge 3 1/2": 2 Ounce Bismuth Shot								
Federal: One-Piece								
Fed. 209A	HS-7	Rem. SP10				41.5/1175	10,200 psi	
Win. 209	HS-7	Rem. SP10				44.5/1225	10,300 psi	
Remington: SP (Separate Yellow Plastic Base Wad)								
Fed. 209A	HS-7	Rem. SP10				40.8/1220	10,900 psi	
Win. 209	HS-7	Rem. SP10				41.0/1200	10,500 psi	

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BISMUTH & HEVI-SHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Polyformed (Separate Plastic Base Wad)								
CCI 209A	HS-7	Rem. SP10				40.0/1220	11,000 psi	
Win. 209	HS-7	Rem. SP10				41.5/1200	10,600 psi	
12 Gauge 2 3/4": 1 Ounce Bismuth Shot								
Winchester: Compression-Formed AA Type								
Win. 209	IMR SR-4756	BW12				32.5/1365	9,700 psi	COS12 overshot
Win. 209	IMR SR-4756	HCD18				33.5/1440	10,500 psi	COS12 overshot
12 Gauge 2 3/4": 1 1/8 Ounce Bismuth Shot								
Ballistic Products: Multi-Hull 12 2A								
M209	IMR SR-4756	TPS1275 + two cork 2420 + Mylar Wrap				29.0/1250	9,200 psi	COS12 + Mica dust wa (15g-Org)
M209	IMR SR-4756	MM1275 + two cork 2420 + Mylar Wrap				29.0/1230	9,300 psi	COS12 + MICA dust wad (15g-Org)
M209	Longshot	X12X+LBC30				31.0/1420	10,100 psi	MICA dust wad
12 Gauge 2 3/4": 1 1/4 Ounce Bismuth Shot								
Ballistic Products: Multi-Hull 16 2A								
M209	IMR PB	Z21 (Trap Commander)				26.5/1315	10,700 psi	OSC
M209	Herco	HCD18				31.0/1410	10,700 psi	OSC
M209	IMR SR-4756	STS				31.0/1270	10,000 psi	OSC
M209	Longshot	STS + 14CW20 (in wad base)				30.0/1425	11,000 psi	OSC+ Buffer BSB 10 gr.
M209	IMR SR-4756	BPGS + BP12 + 18CW20 (in wad base)				30.0/1210	9,000 psi	OSC Buffer BSB 10 gr.
Federal: Gold Medal Plastic								
Fed. 209A	HS-6	Rem. SP-12	30.0/1225	31.0/1250	32.3/1275	33.0/1300	10,500 psi	
Fed. 209A	HS-7	Rem. SP-12	33.0/1225	34.0/1250	35.5/1275	35.7/1300	10,600 psi	

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BISMUTH & HEVI-SHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Gold Medal Plastic								
Win. 209	HS-6	WAA12R	31.5/1225	32.0/1250	33.0/1275	33.5/1300	10,000 psi	
Win. 209	HS-7	WAA12R	34.0/1225	35.0/1250	35.5/1275	36.0/1300	10,200 psi	
Federal: Plastic (Paper Base Wad)								
Fio. 616	HS-6	WAA12R				36.5/1300	8,500 psi	#1
Fiocchi: Plastic (Low Base Wad)								
Fio. 616	HS-6	WAA12F114				33.5/1300	10,400 psi	
Fio. 616	HS-6	WAA12R				34.0/1300	9,500 psi	#1
Remington: Premier & Nitro 27 & STS								
Rem. 209P	HS-6	Rem. RP12	29.0/1225	29.1/1230	29.3/1240	29.5/1250	11,000 psi	
Rem. 209P	HS-7	Rem. RP12	32.5/1225	32.7/1230	33.0/1240	33.5/1250	10,100 psi	
Win. 209	HS-6	WAA12R	29.8/1225	29.9/1230	30.0/1240	30.2/1250	10,400 psi	
Win. 209	HS-7	WAA12R	33.0/1225	33.1/1230	33.3/1240	33.5/1250	10,300 psi	
Winchester: Compression-Formed AA Type								
Win. 209	HS-6	WAA12R				29.0/1225	10,700 psi	
Win. 209	HS-7	WAA12R				32.0/1225	10,500 psi	

Load Notes: #1 = Add one 20-gauge, 0.135" card inside bottom of shotcup.

12 Gauge 2 3/4": 1 3/8 Ounce Bismuth Shot								
Federal: Gold Medal Plastic								
Fed. 209A	HS-6	WAA12R				30.0/1200	10,300 psi	
Fed. 209A	HS-7	WAA12R				32.0/1200	10,400 psi	
Win. 209	HS-6	WAA12R		30.0/1200	31.5/1225	33.0/1250	11,300 psi	
Win. 209	HS-7	WAA12R				33.5/1200	10,300 psi	
Federal: Plastic (Paper Base Wad)								
Win. 209	HS-6	WAA12R				36.0/1300	9,600 psi	
Fiocchi: Plastic (Low Base Wad)								
Fio. 616	HS-6	WAA12R				33.0/1275	10,700 psi	
Fio. 616	HS-7	WAA12R				37.0/1275	10,600 psi	

12 Gauge 2 3/4": 1 1/2 Ounce Bismuth Shot								
Federal: Plastic (Paper Base Wad)								
Win. 209	HS-6	WAA12R			34.0/1275	35.0/1300	11,400 psi	
Win. 209	HS-7	WAA12R				36.5/1250	10,500 psi	

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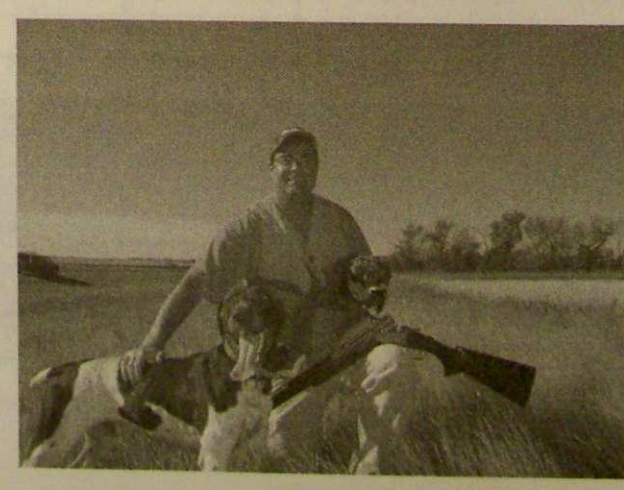
BISMUTH & HEVI-SHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
12 Gauge 3": 1 1/4 Ounce Bismuth Shot								
Ballistic Products Multi-Hull 12 3A								
M209	IMR SR-4756	TSP1275 + CW20 - 1/4				32.0/1245	9,500 psi	OSC + Mica dust wad: Buffer 15gr. Org.
M209	IMR SR-4756	BPGS + BP12 + 18CW20(in wad base)				35.0/1285	8,000 psi	OSC + Buffer BSB 10 gr.
M209	Longshot	STS + 14CW20 (in wad base)				32.0/1310	8,500 psi	OSC + Buffer BSB 10 gr.
Federal(fb)								
Fed. 209A	Longshot	STS				32.0/1480	11,400 psi	1/8 WF20 + MICA
12 Gauge 3": 1 1/2 Ounce Bismuth Shot								
Federal (fb)								
Fed. 209A	Steel	TPS 12300				33.0/1360	11,500 psi	MICA dust wad: Buffer 20 gr. Org.
Ballistic Products Multi-Hull 12 3A								
M209	Blue Dot	STS				35.0/1220	9,500 psi	OSC + Buffer BSB 10 gr.
Federal: Plastic (Paper Base Wad)								
Win. 209	HS-6	WAA12F114				34.0/1250	9,600 psi	
Win. 209	HS-6	WAA12F114				32.5/1200	10,200 psi	
Win. 209	HS-7	WAA12F114				38.5/1300	11,300 psi	
Win. 209	HS-7	WAA12R				37.0/1250	10,400 psi	
Fiocchi: Plastic								
Fio. 616	HS-7	WAA12R				39.0/1300	10,200 psi	#1
Fio. 616	HS-6	WAA12F114				35.0/1300	10,900 psi	

Load Notes: #1 = Add one 20-gauge, 0.135" card inside bottom of shotcup.



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BISMUTH & HEVI-SHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
12 Gauge 3": 1 5/8 Ounce Bismuth Shot								
Fiocchi: Plastic								
Fio. 616	HS-6	WAA12R				34.0/1250	11,300 psi	
Fio. 616	HS-7	WAA12R				38.0/1250	10,800 psi	
12 Gauge 3 1/2": 1 1/2 Ounce Bismuth Shot								
Federal								
CCI 209	Blue Dot	MM1235				38.0/1280	9,900 psi	
12 Gauge 3 1/2": 1 5/8 Ounce Bismuth Shot								
Federal								
CCI 209	Blue Dot	MM1235				38.0/1285	12,200 psi	
12 Gauge 3 1/2": 1 3/4 Ounce Bismuth Shot								
Federal								
CCI 209	Blue Dot	MM1235				37.0/1275	13,800 psi	
16 Gauge 2 3/4": 7/8 Ounce Bismuth Shot								
Ballistic Products: Multi-Hull								
Win. 209	IMR HS-6	NC16 + Z16				32.0/1255	9,600 psi	
Win. 209	IMR HS-6	Z16				34.0/1345	10,500 psi	
16 Gauge 2 3/4": 1 Ounce Bismuth Shot								
Ballistic Products: Multi-Hull								
Win. 209	IMR HS-6	MM16 + two fw20g 1/8"				26.0/1345	11,400 psi	
Win. 209	IMR HS-6	MM16 + two fw20g 1/8"				25.5/1345	11,400 psi	BSB buffer 12 gr.
Win. 209	Longshot	MM16 + two fw20g 1/8"				26.5/1330	11,000 psi	
Win. 209	Longshot	MM16 + two fw20g 1/8"				26.0/1310	10,800 psi	BSB buffer 12 gr.
Win. 209	Longshot	SG16				28.0/1400	9,500 psi	
Win. 209	Longshot	SG16				26.0/1350	8,800 psi	
Win. 209	Longshot	SG16				27.2/1400	10,200 psi	
Win. 209	Longshot	Z16				30.0/1300	9,800 psi	
Win. 209	IMR SR-4756	Z16				30.0/1315	10,100 psi	
Win. 209	IMR SR-4756	Z16				24.0/1245	9,400 psi	

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BISMUTH & HEVI-SHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Cheddite Hull								
Fio. 616	IMR HS-6	MM16 + two fw20g 1/8"				26.5/1345	11,400 psi	
Fio. 616	IMR HS-6	MM16 + two fw20g 1/8"				26.0/1345	11,400 psi	BSB buffer 12 gr.
Fio. 616	Longshot	MM16 + two fw20g 1/8"				26.0/1330	11,000 psi	
Fio. 616	Longshot	MM16 + two fw20g 1/8"				25.5/1310	10,800 psi	BSB buffer 12 gr.
Fio. 616	Longshot	SG16				28.5/1425	10,000 psi	
Federal: Plastic (Paper Base Wad)								
Fed. 209A	Universal	Rem. SP16		19.5/1200	20.0/1225	20.5/1250	9,500 psi	
Fiocchi								
Ch. 209	Longshot	SG16				28.0/1400	9,500 psi	
Fio. 616	IMR HS-6	MM16 + two fw20g 1/8"				26.5/1345	11,400 psi	
Fio. 616	IMR HS-6	MM16 + two fw20g 1/8"				26.0/1345	11,400 psi	BSB buffer 12 gr.
Fio. 616	Longshot	MM16 + two fw20g 1/8"				26.5/1330	11,000 psi	
Fio. 616	Longshot	MM16 + two fw20g 1/8"				26.0/1310	10,800 psi	BSB buffer 12 gr.
Fio. 616	Longshot	SG16				26.0/1350	8,800 psi	
Fio. 616	Longshot	SG16				27.2/1400	10,200 psi	
Remington: Plastic								
Rem. 209P	Universal	Rem. SP16				18.0/1250	11,100 psi	
Win. 209	Universal	Rem. SP16				18.0/1200	10,300 psi	
16 Gauge 2 3/4": 1 1/8 Ounce Bismuth Shot								
Ballistic Products: Multi-Hull								
Win. 209	Blue Dot	MM16 + two fw20g 1/8"				28.5/1325	11,000 psi	
Win. 209	Blue Dot	MM16 + two fw20g 1/8"				27.5/1295	10,850 psi	BSB buffer 12 gr.
Win. 209	Longshot	MM16 + one fw20g 1/8"				24.0/1345	11,200 psi	
Win. 209	IMR SR-4756	MM16 + one fw20g 1/8"				25.5/1315	11,100 psi	
Win. 209	IMR SR-4756	MM16 + one fw20g 1/8"				25.0/1300	10,950 psi	BSB buffer 12 gr.
Cheddite								
Fio. 616	Blue Dot	Two OB16 + one NC16 card				28.0/1310	10,700 psi	
Fio. 616	Blue Dot	MM16 + two fw20g 1/8"				28.0/1345	11,000 psi	

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BISMUTH & HEVI-SHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Cheddite								
Fio. 616	IMR SR-4756	Two OB16 + one NC16 card				27.0/1270	10,200 psi	
Fio. 616	IMR SR-4756	MM16 + one fw20g 1/8"				25.5/1315	11,100 psi	
Fio. 616	IMR SR-4756	MM16 + one fw20g 1/8"				25.0/1300	10,950 psi	BSB buffer 12 gr.
Fiocchi								
Fio. 616	Blue Dot	MM16 + two fw20g 1/8"				28.0/1325	10,950 psi	
Fio. 616	Blue Dot	MM16 + two fw20g 1/8"				27.5/1300	10,850 psi	BSB buffer 12 gr.
Fio. 616	Longshot	MM16 + one fw20g 1/8"				24.0/1310	11,200 psi	
Fio. 616	IMR SR-4756	MM16 + one fw20g 1/8"				25.5/1315	11,100 psi	
Fio. 616	IMR SR-4756	MM16 + one fw20g 1/8"				25.0/1300	10,950 psi	BSB buffer 12 gr.
16 Gauge 2 3/4": 1 1/4 Ounce Bismuth Shot								
Ballistic Products: Multi-Hull								
Win. 209	Blue Dot	MM16 + one fw20g 1/8"				24.5/1295	11,350 psi	
Win. 209	Blue Dot	MM16 + one fw20g 1/8"				24.0/1295	11,150 psi	BSB buffer 12 gr.
Win. 209	IMR HS-7	MM16 + one fw20g 1/8"				25.5/1290	11,300 psi	
Win. 209	IMR HS-7	MM16 + one fw20g 1/8"				25.0/1285	11,000 psi	BSB buffer 12 gr.
Cheddite								
Fio. 616	Blue Dot	MM16 + one fw20g 1/8"				25.0/1295	11,500 psi	
Fio. 616	Blue Dot	MM16 + one fw20g 1/8"				24.5/1290	11,250 psi	BSB buffer 12 gr.
Fio. 616	IMR HS-7	MM16 + one fw20g 1/8"				25.0/1290	11,300 psi	
Fio. 616	IMR HS-7	MM16 + one fw20g 1/8"				24.5/1285	11,500 psi	BSB buffer 12 gr.
Fiocchi								
Fio. 616	Blue Dot	MM16 + one fw20g 1/8"				25.0/1295	11,350 psi	
Fio. 616	Blue Dot	MM16 + one fw20g 1/8"				24.5/1295	11,250 psi	BSB buffer 12 gr.
Fio. 616	IMR HS-7	MM16 + one fw20g 1/8"				25.0/1290	11,300 psi	
Fio. 616	IMR HS-7	MM16 + one fw20g 1/8"				25.0/1285	11,500 psi	BSB buffer 12 gr.

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BISMUTH & HEVI-SHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
20 Gauge 2 3/4": 7/8 Ounce #5 Bismuth Shot								
Fiocchi								
Fio. 616	HS-6	Z20				23.0/1260	9,600 psi	OSC
Fio. 616	Longshot	Z20				23.0/1430	10,500 psi	OSC
20 Gauge 2 3/4": 1 Ounce Bismuth Shot								
Federal: Plastic (Paper Base Wad)								
Fed. 209A	HS-6	WAA20F1				22.0/1200	9,700 psi	
Fed. 209A	HS-7	WAA20F1				24.0/1200	8,700 psi	
Winchester: Compression-Formed AA Type								
CCI 209M	HS-6	Rem. SP20				18.5/1150	11,400 psi	
CCI 209M	HS-7	Rem. SP20				21.0/1150	11,300 psi	
Win. 209	HS-6	Rem. SP20				18.5/1150	11,300 psi	
Win. 209	HS-7	Rem. SP20				21.0/1150	10,600 psi	
20 Gauge 3": 1 Ounce Bismuth Shot								
Federal: Plastic (Paper Base Wad)								
Fed. 209A	HS-7	Fed. 20S1				26.5/1300	10,400 psi	
Fiocchi								
CCI 209M	Steel	.135NC20+CSD20-2				26.0/1290	8,100 psi	OSC
Winchester: Compression-Formed AA Type								
CCI 209M	HS-7	WAA20				26.5/1300	11,000 psi	
Win. 209	HS-7	WAA20				26.5/1300	10,800 psi	
20 Gauge 3": 1 1/8 Ounce Bismuth Shot								
Fiocchi								
Fio. 616	Steel	CSD20-2				26.0/1375	11,400 psi	OSC
CCI 209M	Steel	CSD20-2				25.5/1390	12,000 psi	OSC
28 Gauge 2 3/4": 3/4 Ounce Bismuth Shot								
Federal: Plastic (Paper Base Wad)								
CCI 209M	HS-6	Rem. PT28				17.5/1200	9,700 psi	
CCI 209M	Universal	Rem. PT28				13.5/1200	12,000 psi	
Win. 209	HS-6	Rem. PT28				17.5/1200	9,900 psi	

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BISMUTH & HEVI-SHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal: Plastic (Paper Base Wad)								
Win. 209	Universal	Fed. 28S1				13.5/1200	12,200 psi	
Win. 209	Universal	Rem. PT28				13.5/1200	11,200 psi	
Fiocchi: Purple Target (High Base Wad)								
CCI 209M	HS-6	Pat.Ctrl.28				17.5/1200	10,200 psi	
CCI 209M	HS-6	Rem. PT28				17.5/1200	10,100 psi	
CCI 209M	Universal	Pat.Ctrl.28				13.5/1200	11,900 psi	
CCI 209M	Universal	Rem. PT28				13.8/1200	11,200 psi	
Win. 209	HS-6	Pat.Ctrl.28				17.5/1200	10,200 psi	
Win. 209	HS-6	Rem. PT28				17.5/1200	10,000 psi	
Win. 209	Universal	Pat.Ctrl.28				13.5/1200	12,000 psi	
Win. 209	Universal	Rem. PT28				14.0/1200	11,800 psi	
28 Gauge 2 3/4": 7/8 Ounce Bismuth Shot								
Ballistic Products: Multi-Hull 28 2A.1								
CH 209	Blue Dot	HV28				19.0/1225	11,500 psi	OSC
CH 209	H110	HV28				30.0/1300	8,400 psi	OSC
CH 209	Lil' Gun	HV28				28.0/1200	12,500 psi	OSC
CH 209	IMR SR4756	HV28				17.0/1250	12,500 psi	OSC
CH 209	Steel	HV28				18.0/1300	12,200 psi	OSC
CH 209	Steel	HV28				18.5/1290	11,300 psi	OSC
28 Gauge 2 3/4": 15/16 Ounce Bismuth Shot								
Ballistic Products: Multi-Hull 28 2A.1								
CH209	Steel	HV28				20.0/1300	12,400 psi	OSC
CH209	Steel	HV28				17.0/1235	11,800 psi	OSC
28 Gauge 2 3/4": 1 Ounce Bismuth Shot								
Ballistic Products: Multi-Hull 28 2A.1								
CH 209	Steel	HV28				19.0/1250	12,500 psi	OSC
CH 209	Steel	HV28				15.5/1185	11,650 psi	OSC
410 Bore 3": 5/8 Ounce Bismuth Shot								
Federal: Plastic (Paper Base Wad)								
Fed. 209A	H110	Fed. 410SC				16.0/1200	12,600 psi	
Remington: Plastic								
Rem. 209A	H110	Rem. SP410				17.0/1225	11,000 psi	

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BISMUTH & HEVI-SHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type								
Win. 209	H110	Pat.Ctrl.Ornge				16.0/1200	13,300 psi	
HEVI-SHOT								
10 Gauge 3 1/2": 1 1/4 Ounce Hevi-Shot								
Federal								
Fed. 209A	Green Dot	Two X10X + DECI-MAX + Mylar Wrap				30.0/1430	9,900 psi	
Fed. 209A	IMR SR-7625	Two X10X + DECI-MAX + Mylar Wrap				42.0/1400	9,900 psi	
Fed. 209A	Unique	Two X10X + DECI-MAX + Mylar Wrap				34.0/1425	9,900 psi	
12 Gauge 2 3/4": 1 1/8 Ounce Hevi-Shot								
Ballistic Products: Multi-Hull 12 2A								
M209	IMR SP-4756	TPS1275 + two cork 2420 + Mylar Wrap				29.0/1250	9,200 psi	COS12, Buffe 15g-Org, Mica dust
M209	IMR SP-4756	MM1275 + two cork 2420 + Mylar Wrap				29.0/1250	9,300 psi	COS12, Buffe 15g-Org, Mica dust
12 Gauge 3": 1 1/4 Ounce Hevi-Shot								
Ballistic Products Multi-Hull 12 3A								
M209	IMR SR-4756	TPS1275 + one cork 2420+ Mylar Wrap				32.0/1275	10,000 psi	COS12: Buffe Org. 15 gr. MICA dust wad
M209	IMR SR-4756	MM1275 + one cork 2420 + Mylar Wrap				32.0/1275	10,000 psi	COS12: Buffe Org. 15 gr. MICA dust wad
12 Gauge 3": 1 3/8 Ounce Hevi-Shot								
Ballistic Products Multi-Hull 12 3A								
M209	IMR SR-4756	TPS1275+14CW20 (in wad base)				32.0/1225	9,300 psi	OSC + Buffer 10 gr. Org.
Federal FB								
Fed. 209A	IMR SR-4756	TPS1275+14CW20 (in wad base)				32.0/1300	11,200 psi	OSC + Buffer 10 gr. Org.

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BISMUTH & HEVI-SHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
Federal FB								
Fed. 209A	Longshot	TPS1230+(2) 14CW20				26.0/1255	9,900 psi	OSC + Buffer 10 gr. Org. MICA dust wad
12 Gauge 3": 1 1/2 Hevi-Shot								
Federal (fb)								
Fed. 209	Blue Dot	TPS1275+18CW20 (in wad base)				31.0/1270	11,500 psi	OSC + Buffer 10 gr. Org.
12 Gauge 3 1/2": 1 1/4 Ounce Hevi-Shot								
Federal								
Fed. 209A	IMR SR-4756	Two X12X + TPS1275 + two 1/4 WF20				35.0/1345	9,800 psi	
Fiocchi								
Fio. 616	IMR SR-4756	Three BPGS + TPS1275 + two 1/4 WF20				35.0/1340	9,100 psi	
12 Gauge 3 1/2": 1 3/8 Ounce Hevi-Shot								
Federal								
Fed. 209A	Blue Dot	BPGS + AIR WEDGE + MM1275				38.0/1300	9,400 psi	OSC
12 Gauge 3 1/2": 1 1/2 Ounce Hevi-Shot								
Federal								
Fed. 209A	Blue Dot	Two OB12 + TPS1275				34.0/1315	9,900 psi	OSC
Fiocchi								
Fio. 616	Steel	Three BPGS + TPS1230 + 1/4 WF20				39.0/1350	10,900 psi	OSC
12 Gauge 3 1/2: 1 5/8 Ounce Hevi-Shot								
Fiocchi								
Fio. 616	Steel	Three BPGS + TPS1230 + 1/4 WF20				38.0/1330	10,400 psi	OSC

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BISMUTH & HEVI-SHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
12 Gauge 3 1/2": 1 3/4 Ounce Hevi-Shot								
Federal								
Fed. 209 A	Steel	MM1235+1/ 4WF20				36.0/1300	10,500 psi	OSC
12 Gauge 3 1/2": 1 7/8 Ounce Hevi-Shot								
Fiocchi								
Fio. 616	Steel	Two BPGS + TPS1235 + 1/4 WF20				35.0/1275	9,800 psi	OSC
12 Gauge 3 1/2": 2 Ounce Hevi-Shot								
Fiocchi								
Fio. 616	Steel	TPS1235+1/ 4WF20				32.0/1320	11,400 psi	OSC
16 Gauge 2 3/4": 1 Ounce Hevi-Shot								
Ballistic Products: Multi-Hull								
Win. 209	IMR 800-X	MM16 + two fw20g 1/8"				22.5/1335	11,200 psi	Mythin in wad
Win. 209	Longshot	MM16 + one fw20g 1/8"				25.0/1310	11,000 psi	Mythin in wad
Win. 209	IMR SR-4756	MM16 + two fw20g 1/8"				23.0/1305	10,700 psi	Mythin in wad
Fiocchi								
Fio. 616	IMR 800-X	MM16 (#2221680) +1/4" felt 20				22.0/1310	11,500 psi	OSC
Fio. 616	Longshot	MM16 (#2221680) +1/4" felt 20				25.0/1315	10,000 psi	OSC
Fio. 616	IMR SR 4756	MM16 (#2221680) +1/4" felt 20				23.0/1320	10,600 psi	OSC
Fio. 616	IMR 800-X	MM16 (#2221680) +1/4" felt 20				20.0/1300	11,200 psi	OSC
Fio. 616	Blue Dot	MM16 (#2221680) +1/4" felt 20				27.0/1340	11,000 psi	OSC
Fio. 616	HS-7	MM16 (#2221680) + 1/8" felt 20				27.0/1275	10,900 psi	OSC
Fio. 616	Blue Dot	MM16 (#2221680) + 1/8" felt 20				26.0/1265	10,900 psi	OSC
Fio. 616	HS-7	MM16 (#2221680) + 1/8" felt 20				25.0/1255	11,100 psi	OSC

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BISMUTH & HEVI-SHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Load Notes
16 Gauge 2 3/4": 1 1/8 Ounce Hevi-Shot								
Ballistic Products: Multi-Hull								
Win. 209	IMR 800-X	MM16 + one fw20g 1/8"				20.5/1345	11,300 psi	Mythin in wad
Win. 209	Blue Dot	MM16 + one fw20g 1/8"				27.5/1340	11,200 psi	Mythin in wad
Win. 209	IMR HS-7	MM16 + one fw20g 1/8"				27.0/1285	11,000 psi	Mythin in wad
Fiocchi								
Fio. 616	IMR 800-X	MM16 + one fw20g 1/8"				20.5/1330	11,100 psi	Mythin in wad
Fio. 616	Blue Dot	MM16 + one fw20g 1/8"				27.5/1340	11,200 psi	Mythin in wad
Fio. 616	IMR HS-7	MM16 + one fw20g 1/8"				27.0/1275	10,900 psi	Mythin in wad
16 Gauge 2 3/4": 1 1/4 Ounce Hevi-Shot								
Ballistic Products: Multi-Hull								
Win. 209	Blue Dot	MM16 + one fw20g 1/8"				26.0/1280	11,000 psi	
Win. 209	IMR HS-7	MM16 + one fw20g 1/8"				25.5/1280	11,100 psi	
Fiocchi								
Fio. 616	Blue Dot	MM16 + one fw20g 1/8"				26.0/1275	10,900 psi	Mythin in wad
Fio. 616	IMR HS-7	MM16 + one fw20g 1/8"				25.5/1295	11,000 psi	Mythin in wad
20 Gauge 2 3/4": 7/8 Ounce #7 HeviShot								
Fiocchi								
Fio. 616	Steel	CSD20-2+18WF20				23.0/1325	9,600 psi	OSC

This data is bismuth shot-specific. It does not interchange with data used for lead or any other non-toxic shot. Use only with the components and amounts listed.

Chapter 19

BUCKSHOT DATA

LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
10 GAUGE GENERAL LIST								
10 Gauge 2 7/8": 1 1/4 Ounce Buckshot								
Federal								
CCI209	Herco	X10X + Deci-Max: 1/4" 12g CW + OS10				30.0/1240	7,050 psi	Roll Crimp
CCI209	IMR PB	X10X + Deci-Max: 1/4" 12g CW + OS10				30.0/1230	7,670 psi	Roll Crimp
Fed. 209A	Unique	X10X + Deci-Max: 1/4" 12g CW + OS10				30.0/1130	7,070 psi	Roll Crimp
Fed. 209A	Universal	X10X + Deci-Max: 1/4" 12g CW + OS10				30.0/1290	8,940 psi	Roll Crimp
10 Gauge 2 7/8": 1 3/8 Ounce Buckshot								
Federal								
CCI209	IMR 800-X	X10X + Deci-Max: 1/8" 12g CW + OS10				30.0/1260	8,550 psi	Roll Crimp
CCI209	Universal	X10X + Deci-Max: 1/8" 12g CW + OS10				30.0/1220	8,740 psi	Roll Crimp
10 Gauge 3 1/2": 1 3/8 Ounce Buckshot								
Federal: Plastic								
Fed. 209A	IMR PB	Two X10X + Deci-Max + OS10				31.0/1300	9,300 psi	
Fed. 209A	IMR PB	Two X10X + Deci-Max + OS10				33.0/1290	9,500 psi	
Fed. 209A	IMR PB	X10X + Deci-Max + OS10				31.0/1280	9,100 psi	
Fed. 209A	Unique	Two X10X + Deci-Max + OS10				34.0/1350	9,600 psi	

This data is lead buckshot-specific. It does not interchange with data used for any other types of lead or non-toxic shot. Use only with the components and amounts listed. Avoid use in tightly choked guns (smaller than Modified) as poor patterns will result.

LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
10 Gauge 3 1/2": 1 1/2 Ounce Buckshot								
Federal: Plastic								
Fed. 209A	Herco	X10X + Deci-Max + OS10				36.0/1320	9,700 psi	
Fed. 209A	IMR SR-4756	MM1035 + two 1/4" 12g fw + OS10				44.0/1390	10,700 psi	
Fed. 209A	IMR SR-7625	X10X + Deci-Max + NC10 + OS10				36.0/1285	9,500 psi	
10 Gauge 3 1/2": 1 5/8 Ounce Buckshot								
Federal: Plastic								
Fed. 209A	Blue Dot	MM1035 + two 1/4" 12g fw + OS10				44.5/1340	10,300 psi	
Winchester: AA Plastic								
Win. 209'	HS-7	BPD10 + three 1/4" 20g fw + OS10				57.0/1430	10,250 psi	
10 Gauge 3 1/2": 1 3/4 Ounce Buckshot								
Federal: Plastic								
Fed. 209A	Blue Dot	MM1035 + two 1/4" 12g fw + OS10				42.0/1300	10,800 psi	
10 Gauge 3 1/2": 1 7/8 Ounce Buckshot								
Winchester: Polyformed								
Fed. 209A	IMR SR-4756	BPD10 + 1/8" 20g fw + OS10				42.0/1220	9,700 psi	
10 Gauge 3 1/2": 2 Ounce Buckshot								
Federal								
Fed. 209A	IMR 800-X	BPD10 + 1/4" 20g fs + OS10				32.0/1235	11,000 psi	
Fed. 209A	Longshot	X10X + Deci-Max + OS10				36.0/1290	11,000 psi	
10 Gauge 3 1/2": 2 1/8 Ounce Buckshot								
Federal: Plastic								
Fed. 209A	HS-7	X10X + NC10 + 14C10 + Teflon				44.0/1150	8,900 psi	

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LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
10 GAUGE SPECIFIC LIST								
10 Gauge 3 1/2": #4 Lead Buckshot								
Federal: Plastic								
Fed. 209	Blue Dot	Rem. SP10 + 20-gauge 0.270" card				45.0/1275	10,100 psi	40 pellets
Remington: Plastic								
Rem. *57	Blue Dot	Rem. SP10 + 20-gauge 0.270" card				46.0/1275	10,100 psi	
Winchester: Plastic (Polyformed Separate Plastic Base Wad)								
Win. 209	Blue Dot	Rem. SP10 + 20-gauge 0.270" card				47.5/1275	10,000 psi	40 pellets
10 Gauge 3 1/2": #0 Lead Buckshot								
Winchester: Plastic (Polyformed Separate Plastic Base Wad)								
Fed. 209	Blue Dot	Rem. SP10 + 20-gauge 0.135" card				46.0/1300	10,000 psi	17 pellets
Win. 209	Blue Dot	Rem. SP10				51.0/1300	9,500 psi	17 pellets
Remington: Plastic								
Rem. 57*	Blue Dot	Rem. SP10 + 20-gauge 0.135" card				48.5/1300	9,800 psi	
12 GAUGE GENERAL LIST								
12 Gauge: 2 3/4": 1 Ounce Buckshot								
Ballistic Products: Multi-Hull 12/2A								
Ch. 209	International	LB12 + OS12				23.0/1345	9,200 psi	Teflon Wrap
Ch. 209	Titewad	Four NC12 + HCW12 + OS12				19.0/1155	9,900 psi	Teflon Wrap
Ch. 209	Titewad	Four NC12 + HCW12 + OS12				20.0/1200	10,200 psi	Teflon Wrap
M209	IMR 700-X	Two HWC12 + OS12				22.0/1285	9,400 psi	Teflon Wrap
Federal: Gold Medal Plastic								
Win. 209	IMR 700-X	Z21 + OS12				21.0/1370	11,460 psi	
Fiocchi								
Fio. 616	Nitro 100	BW12 + 1/8" 12g fw + OS12				20.0/1270	7,500 psi	Teflon Wrap

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LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
Winchester: Compression-Formed AA Type								
Win. 209	Nitro 100	Z21 + OS12				16.5/1200	6,400 psi	
Win. 209	Solo 1000	HCD21 + OS12				19.5/1290	9,000 psi	
Win. 209	Solo 1000	Z21 + OS12				18.0/1200	7,700 psi	
Win. 209	IMR 700-X	LB12 + OS12				18.0/1335	10,450 psi	Teflon Wrap
Win. 209	Nitro 100	BW12 + 1/8" 12g fw + OS12				20.0/1340	10,600 psi	Teflon Wrap
Win. 209	Clays	Two NC12 + HCW12 + OS12				19.0/1230	9,800 psi	Teflon Wrap
Win. 209	Clays	Two NC12 + HCW12 + OS12				18.5/1200	9,600 psi	Teflon Wrap
Win. 209	International	LB12 + OS12				23.0/1380	10,400 psi	Teflon Wrap
Win. 209	International	Two NC12 + 23C12 + OS12				22.0/1275	9,100 psi	Teflon Wrap
12 Gauge: 2 3/4": 1 1/8 Ounce Buckshot								
Ballistic Products: Multi-Hull 12/2A								
CCI 209M	Unique	X12X + 23C12 + OS12				25.0/1320	10,800 psi	Teflon Wrap
Ch. 209	IMR PB	LB12 + OS12				28.0/1380	9,400 psi	
M209	Green Dot	Z21 + OS12				22.0/1265	9,300 psi	
M209	Red Dot	Z21 + OS12				19.0/1180	8,700 psi	
Win. 209	Clays	LB12 + OS12				20.0/1280	11,400 psi	
Win. 209	Green Dot	Z21 + OS12				22.0/1245	8,900 psi	
Win. 209	Red Dot	Z21 + OS12				19.0/1180	8,800 psi	
Cheddite								
Ch. 209	Longshot	HCD21 + OS12				37.0/1600	9,340 psi	
Ch. 209	Longshot	Z21 + OS12				37.0/1630	10,250 psi	
Fiocchi								
Fio. 616	Solo 1250	LB12 + OS12				30.0/1300	9,800 psi	
Fio. 616	Nitro 100	BW12 + OS12				20.0/1260	9,050 psi	Teflon Wrap: Roll Crimp
Fio. 616	Red Dot	Two GS2 + 1/4" 12g fw + OS12				18.0/1280	10,500 psi	Teflon Wrap
Fio. 616	Solo 1000	Two GS2 + 1/4" 12g fw + OS12				18.0/1300	11,000 psi	Teflon Wrap
Remington: STS								
Win. 209	Unique	HCD21 + OS12				24.0/1300	11,000 psi	
Winchester: Compression-Formed AA Type								
Win. 209	Nitro 100	HCD18 + OS12				15.5/1125	7,900 psi	
Win. 209	Nitro 100	HCD18 + OS12				17.0/1200	9,500 psi	
Win. 209	Nitro 100	HCD18 + OS12				18.0/1255	10,800 psi	
Win. 209	Solo 1000	HCD18 + OS12				17.0/1125	7,800 psi	
Win. 209	Solo 1000	HCD18 + OS12				17.5/1145	8,300 psi	
Win. 209	Solo 1000	HCD18 + OS12				18.5/1200	9,700 psi	

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LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
Winchester: Compression-Formed AA Type								
Win. 209	Solo 1250	HCD18 + OS12				22.0/1200	9,500 psi	
Win. 209	Solo 1250	HCD18 + OS12				23.0/1255	10,800 psi	
Win. 209	Unique	HCD18 + OS12				24.0/1300	11,200 psi	
Win. 209	Nitro 100	BW12 + OS12				18.5/1290	11,500 psi	Teflon Wrap
Win. 209	International	Three NC12 + two 14C12 + OS12				20.0/1210	10,500 psi	Teflon Wrap
12 Gauge: 2 3/4": 1 1/4 Ounce Buckshot								
Ballistic Products: Multi-Hull 12/2A								
CCI 209M	IMR 800-X	Z21 + OS12				27.0/1300	9,800 psi	
CCI 209M	Herco	HCD18 + OS12				26.0/1233	8,700 psi	
CCI 209M	Herco	HCD18 + OS12				28.0/1315	9,700 psi	
CCI 209M	Herco	STS + 1/8" 20g fw + OS12				26.0/1290	10,300 psi	
CCI 209M	HS-6	STS + 1/8" 20g fw + OS12				33.5/1330	10,500 psi	
CCI 209M	Longshot	Z21 + OS12				31.0/1390	9,500 psi	
CCI 209M	IMR PB	Z21 + OS12				26.5/1260	9,400 psi	
CCI 209M	IMR SR-4756	STS + 1/8" 20g fw + OS12				31.0/1305	10,400 psi	
CCI 209M	Herco	Two X12X + 1/4" 12g fw + OS12				30.5/1400	11,500 psi	Teflon Wrap
CCI 209M	HS-6	LB12 + OS12				34.0/1355	10,400 psi	Teflon Wrap
M209	IMR 800-X	Z21 + OS12				27.0/1290	9,400 psi	
M209	IMR 800-X	Z21 + OS12				29.0/1335	9,900 psi	
M209	Blue Dot	STS + 1/8" 20g fw + OS12				33.0/1200	8,600 psi	
M209	Herco	HCD18 + OS12				29.0/1375	10,600 psi	
M209	Herco	HCD18 + OS12				26.0/1200	7,800 psi	
M209	Herco	STS + 1/8" 20g fw + OS12				26.0/1240	9,200 psi	
M209	HS-6	STS + 1/8" 20g fw + OS12				32.0/1265	9,800 psi	
M209	Longshot	Z21 + OS12				31.0/1380	9,200 psi	
M209	IMR PB	Z21 + OS12				26.5/1300	10,200 psi	
M209	Solo 1250	Z21 + OS12				22.0/1035	7,300 psi	
M209	IMR SR-4756	STS + 1/8" 20g fw + OS12				31.0/1250	9,400 psi	
M209	Herco	Three NC12 + 23C12 + OS12				31.0/1290	8,600 psi	Teflon Wrap
M209	Herco	GS2 + two 1/4" 12g fw + OS12				31.0/1320	8,700 psi	Teflon Wrap
M209	Herco	X12X + 1/4" 20g fw + OS12				27.0/1235	9,400 psi	Teflon Wrap
M209	Herco	X12X + 1/4" 20g fw + OS12				30.0/1345	9,200 psi	Teflon Wrap
M209	IMR SR-7625	GS2 + 1/4" 20g fw + OS12				31.0/1290	9,400 psi	Teflon Wrap

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LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
Ballistic Products: Multi-Hull 12/2A								
M209	IMR SR-7625	X12X + two 1/4" 20g fw + OS12				31.0/1290	9,500 psi	Teflon Wrap
M209	Unique	X12X + 23C12 + OS12				23.0/1130	8,500 psi	Teflon Wrap
Win. 209	HS-6	BPGS + BP12 + 1/8" 20g fw + OS12				34.0/1325	10,700 psi	
Win. 209	IMR PB	Z21 + OS12				26.5/1280	9,700 psi	
Win. 209	Solo 1250	Z21 + OS12				22.0/1045	7,400 psi	
Win. 209	Unique	BPGS + BP12 + 1/4" 20g fw + OS12				25.0/1250	9,550 psi	
Federal: Gold Medal								
CCI 209	HS-6	BPGS + BP12 + 1/4" 20g fw + OS12				33.0/1280	11,100 psi	
Fiocchi								
Fio. 616	Herco	GS2 + 1/4" 12g fw + OS12				26.0/1225	9,100 psi	Teflon Wrap
Fio. 616	HS-6	GS2 + two 1/4" 12g fw + OS12				33.0/1360	10,400 psi	Teflon Wrap
Fio. 616	IMR PB	GS2 + two 1/4" 12g fw + OS12				25.0/1390	11,000 psi	Teflon Wrap
Fio. 616	Solo 1250	GS2 + 1/4" 12g fw + OS12				25.0/1300	10,400 psi	Teflon Wrap
Fio. 616	IMR SR-7625	GS2 + 1/4" 12g fw + OS12				30.0/1390	11,500 psi	Teflon Wrap
Remington								
Win. 209	Herco	BPGS + BP12 + 1/4" 20g fw + OS12				22.0/1150	10,400 psi	
12 Gauge: 2 3/4": 1 3/8 Ounce Buckshot								
Ballistic Products: Multi-Hull 12/2A								
CCI 209M	Herco	STS + OS12				26.5/1280	11,000 psi	
CCI 209M	Herco	X12X + HCW12 + OS12				28.0/1275	11,100 psi	Teflon Wrap
M209	Herco	Two 17C12 + HCW12 + OS12				28.0/1125	8,300 psi	Teflon Wrap
M209	Herco	GS2 + 1/4" cw + 17C12 + OS12				28.0/1220	9,300 psi	Teflon Wrap
M209	IMR SR4756	GS2 + 38C12 + OS12				30.0/1150	8,900 psi	Teflon Wrap
M209	IMR SR4756	X12X + 38C12 + OS12				30.0/1165	8,900 psi	Teflon Wrap
Win. 209	Herco	STS + OS12				26.5/1285	11,000 psi	

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LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
Federal: Gold Medal								
Win. 209	Blue Dot	BPGS + BP12 + 1/4" 20g fw + OS12				36.0/1310	8,500 psi	
Win. 209	Blue Dot	BPGS + BP12 + 1/4" 20g fw + OS12				38.0/1360	8,700 psi	
Remington SP								
Win. 209	Unique	BPGS + BP12 + 1/4" 20g fw + OS12				25.0/1285	9,900 psi	
Winchester: Compression-Formed AA Type								
Win. 209	Herco	BPGS + BP12 + 1/4" 20g fw + OS12				26.0/1330	9,900 psi	
Win. 209	Herco	BPGS + BP12 + 1/4" 20g fw + OS12				27.5/1400	11,400 psi	
Win. 209	IMR PB	BPGS + BP12 + 1/4" 20g fw + OS12				21.0/1100	6,750 psi	
Win. 209	Unique	BPGS + BP12 + 1/4" 20g fw + OS12				24.0/1280	9,600 psi	
12 Gauge: 2 3/4": 1 1/2 Ounce Buckshot								
Federal: Gold Medal								
Win. 209	Blue Dot	BPGS + BP12				30.0/1220	11,500 psi	
Fiocchi								
Fio. 616	Blue Dot	STS + 1/8" 20g fw + OS12				31.0/1240	11,400 psi	
Remington								
Win. 209	IMR 800-X	BTGS + BP12 + OS12				22.0/1150	10,400 psi	
12 Gauge 3": 1 1/4 Ounce Buckshot								
Ballistic Products: Multi-Hull 12/3A								
Ch. 209	IMR PB	LB12 + Teflon + OS12				30.0/1395	11,400 psi	
Federal (FB)								
Fed. 209A	Herco	STS + OS Card				30.0/1400	11,400 psi	

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LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
Fiocchi								
Fio. 616	Solo 1000	BPGS + HCD21 + OS 12				23.0/1400	11,300 psi	
Fio. 616	Solo 1000	BPGS + HCD24 + OS 12				25.0/1375	11,200 psi	
Fio. 616	Solo 1000	BPGS + Z21 + OS 12				24.0/1410	11,400 psi	
Fio. 616	IMR SR-7625	HCD21 + OS12				34.0/1345	10,400 psi	
Fio. 616	IMR SR-7625	Z21 + OS12				34.0/1235	10,300 psi	
Fio. 616	IMR 800-X	GS2 + Teflon + HCW12 + OS12				34.0/1380	11,150 psi	
12 Gauge 3": 1 3/8 Ounce Buckshot								
Ballistic Products: Multi-Hull 12/3A								
M209	HS-6	Two GS2 + Teflon + 38C12 + S12				31.0/1200	10,000 psi	
M209	HS-6	Two X12X + Teflon + 1/4" 12cw + OS12				31.0/1200	9,900 psi	
M209	IMR SR-7625	Two X12X + Teflon + 38C12 + OS12				31.0/1340	11,200 psi	
Federal (FB)								
Fed. 209A	Longshot	NC12 + MG42 + OS Card				30.0/1320	10,600 psi	
Remington								
Ch. 209	HS-7	BPGS + BP12 + 1/8" 20 fw + OS Card				39.0/1300	10,600 psi	
Rem. 209P	HS-6	BPGS + BP12 + 1/8" 20 fw + OS Card				31.0/1340	10,900 psi	
Win. 209	HS-7	BPGS + BP12 + 1/8" 20 fw + OS Card				39.0/1290	10,600 psi	
Win. 209	IMR SR-4756	BPGS + BP12 + Teflon + 1/8" 20 fw + OS Card				31.5/1290	11,500 psi	
12 Gauge 3": 1 1/2 Ounce Buckshot								
Cheddite								
Ch. 209	IMR SR-4756	STS + OS12				35.0/1315	10,900 psi	
Fio. 209	IMR SR-4756	STS + OS12				35.0/1270	9,500 psi	
M209	IMR SR-4756	Two X12X + Teflon + 1/4" 12cw + OS12				34.0/1285	11,100 psi	
Federal (FB)								
Fed. 209A	IMR SR-4756	STS + OS12				34.0/1320	11,000 psi	

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LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
Fiocchi								
Ch. 209	HS-7	BPGS + BP12 +1/8" 20 fw + OS12				35.0/1230	9,300 psi	
Fio. 616	Blue Dot	STS + OS12				38.0/1265	11,200 psi	
Fio. 616	IMR SR-4756	STS + OS12				35.0/1265	11,000 psi	
Fio. 616	IMR SR-4756	STS + OS12				35.0/1280	10,100 psi	
Fio. 616	IMR SR-4756	GS2 + Teflon + two 1/4" 12 cw + OS12				36.0/1275	11,500 psi	
12 Gauge 3": 1 5/8 Ounce Buckshot								
Federal								
CCI 209	IMR SR-4756	BPGS + BP12 + OS12				36.5/1280	11,000 psi	
Federal (FB)								
CCI 209	HS-7	BPGS + BP12 + OS12				36.5/1200	10,900 psi	
Fiocchi								
Fio. 616	Blue Dot	GS2 + Teflon + two 1/4" 12cw + SS12				39.0/1255	11,500 psi	
Fio. 616	HS-7	Two GS2 + NC12 + Teflon + NC12 + OS12				39.0/1255	11,500 psi	
Fio. 616	Longshot	GS2 + Teflon + 1/4" 12cw + OS12						
Winchester: Compression-Formed AA Type								
Win. 209	IMR SR-4756	BPGS + BP12 + OS12				31.5/1200	9,600 psi	
12 Gauge 3": 1 3/4 Ounce Buckshot								
Fiocchi								
Fio. 616	Blue Dot	GS2 + Teflon + 1/4" 12cw + OS12				38.0/1245	11,150 psi	
12 Gauge 3": 1 7/8 Ounce Buckshot								
Fiocchi								
Fio. 616	Blue Dot	GS2 + Teflon + 1/4" 12cw + OS12				35.0/1200	10,000 psi	

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LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
12 Gauge 3 1/2": 1 1/2 Ounce Buckshot								
Federal: Plastic								
Fed. 209A	Blue Dot	BW12 + TPS1275 + OS12				34.0/1235	9,300 psi	
12 Gauge 3 1/2": 1 5/8 Ounce Buckshot								
Federal: Plastic								
CCI 209	Blue Dot	Two BPGS + TR12 + two 1/4" fw 20 + OS12				36.5/1230	11,500 psi	
12 Gauge 3 1/2": 2 Ounce Buckshot								
Federal: Plastic								
Win. 209	Blue Dot	MM1235 + OS12				37.0/1240	13,200 psi	
12 GAUGE SPECIFIC LIST								
12 Gauge 2 3/4": #4 Lead Buckshot								
Federal: Plastic (Paper Base Wad)								
Fed. 209	Blue Dot	0.135" card + 3/16" fiber + 0.135" card				37.0/1250	10,700 psi	34 pellets
Fed. 209	IMR 700-X	Rem. SP12 + 20 grains SP Shot Buffer				20.5/1225	10,800 LUP	24 pellets
Fed. 209	IMR PB	Fed. 12S4				25.0/1275	10,800 LUP	27 pellets
Fed. 209	IMR SR-7625	Four BP #BPGS shot buffers				30.0/1315	8,500 LUP	27 pellets
Fed. 209A	HS-6	Fed. 12S4	35.0/1300	36.0/1350	37.0/1375	38.0/1400	9,500 psi	27 pellets
Fed. 209A	Universal	Fed. 12S4				27.0/1300	9,900 psi	27 pellets
Fed. 410	IMR 700-X	Fed. 12S3				19.0/1200	10,900 LUP	27 pellets
Remington: Premier & Nitro 27 & STS								
CCI 209M	HS-6	WAA12R		30.5/1250	31.0/1275	31.5/1300	10,400 psi	27 pellets
Remington: Unibody (Integral Plastic Base Wad)								
Rem. 209P	IMR 700-X	Rem. Fig.-8 + 18 grains BP Shot Buffer				17.0/1205	8,800 LUP	20 pellets
Rem. 209P	IMR 700-X	Rem. RXP12 + 18 grains BP Shot Buffer				17.0/1200	8,800 LUP	20 pellets

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LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
Remington: Unibody (Integral Plastic Base Wad)								
Fed. 209	IMR PB	Rem. RP12 + 23 grains BP Shot Buffer				22.5/1250	9,600 LUP	22 pellets
Fed. 209	IMR SR-4756	Two BPGS + 25 grains BP Shot Buffer				28.0/1220	8,500 LUP	27 pellets
Fed. 209	IMR SR-7625	Rem. RP12 + 20 grains BP Shot Buffer				29.0/1400	8,800 LUP	21 pellets
Winchester: Compression-Formed AA Type								
Win. 209	Blue Dot	0.135" card + 3/16" fiber + 0.135" card				39.0/1250	10,900 psi	34 pellets
Win. 209	HS-6	WAA12R		30.0/1250	31.0/1275	32.0/1300	10,000 psi	27 pellets
Win. 209	Universal	WAA12R				23.6/1250	10,400 psi	27 pellets
12 Gauge 2 3/4": #3 Lead Buckshot								
Federal: Plastic (Paper Base Wad)								
Fed. 209	IMR 700-X	Rem. SP12 + 20 grains BP Shot Buffer				20.5/1235	10,700 LUP	22 pellets
Fed. 209	IMR 700-X	Fed. 12S4				19.5/1190	10,500 LUP	25 pellets
Fed. 209	IMR PB	Four BP BPGS shot buffers				27.0/1375	10,900 LUP	23 pellets
Fed. 209	IMR SR-7625	Four BP BPGS shot buffers				32.0/1375	8,600 LUP	23 pellets
Remington: Unibody (Integral Plastic Base Wad)								
Rem. 209P	IMR 700-X	WAA12F114 + 19 gains BP Shot Buffer				17.0/1195	9,400 LUP	19 pellets
Fed. 209	IMR PB	Rem. RP12 + 23 grains BP Shot Buffer				23.0/1285	10,600 LUP	20 pellets
Fed. 209	IMR SR-4756	Two BPGS + 25 grains BP Shot Buffer				28.0/1220	9,000 LUP	25 pellets
Fed. 209	IMR SR-7625	Rem. RP12 + 20 grains BP Shot Buffer				29.5/1400	9,600 LUP	20 pellets

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LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
12 Gauge 2 3/4": #1 Lead Buckshot								
Federal: Plastic (Paper Base Wad)								
Fed. 209	IMR 700-X	Fed. 12S4 + 20 grains BP Shot Buffer				21.0/1300	10,900 LUP	12 pellets
Fed. 209	IMR 700-X	Four BP BPGS Shot Buffers				19.5/1200	10,900 LUP	15 pellets
Fed. 209	IMR PB	Three BP BPGS Shot Buffers				26.5/1315	10,800 LUP	15 pellets
Fed. 209	IMR SR-7625	Four BP BPGS Shot Buffers				31.0/1355	9,100 LUP	15 pellets
Remington: Unibody (Integral Plastic Base Wad)								
Rem. 209P	IMR 700-X	WAA12F114 + 19 gains BP Shot Buffer				16.5/1185	10,000 LUP	12 pellets
Fed. 209	IMR PB	Rem. RP12 + 23 grains BP Shot Buffer				22.5/1270	10,200 LUP	12 pellets
Fed. 209	IMR SR-4756	Two BPGS + 25 grains BP Shot Buffer				28.0/1230	9,400 LUP	15 pellets
Fed. 209	IMR SR-7625	Rem. RP12 + 20 grains BP Shot Buffer				29.5/1405	9,500 LUP	12 pellets
12 Gauge 2 3/4": #0 Lead Buckshot								
Federal: Plastic (Paper Base Wad)								
Fed. 209	IMR 700-X	Fed. 12S3				18.0/1255	7,800 LUP	6 pellets
Fed. 209	IMR 700-X	Fed. 12S4				18.5/1250	8,100 LUP	8 pellets
Fed. 209	IMR 700-X	Fed. 12S4 + 20 grains BP Shot Buffer				20.5/1285	10,700 LUP	8 pellets
Fed. 209	IMR 700-X	Four BP BPGS Shot Buffers				20.5/1345	10,200 LUP	9 pellets
Fed. 209	IMR 700-X	Rem. SP12 + 20 grains BP Shot Buffer				20.5/1230	10,600 LUP	10 pellets
Fed. 209	IMR PB	Fed. 12S4				28.0/1245	8,100 LUP	6 pellets
Fed. 209	IMR PB	Fed. 12C1				26.0/1355	8,200 LUP	8 pellets
Fed. 209	IMR PB	Four BP BPGS Shot Buffers				27.5/1410	9,200 LUP	9 pellets
Fed. 209	IMR SR-7625	Four BP BPGS Shot Buffers				30.5/1405	6,400 LUP	6 pellets
Fed. 209	IMR SR-7625	Four BP BPGS Shot Buffers				31.0/1440	7,700 LUP	8 pellets
Fed. 209	IMR SR-7625	Four BP BPGS Shot Buffers				33.0/1445	7,400 LUP	9 pellets

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LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
Remington: Unibody (Integral Plastic Base Wad)								
Rem. 209P	IMR 700-X	WAA12f114 + 20 grains BP Shot Buffer				17.0/1185	9,900 LUP	8 pellets
Rem. 209P	IMR 700-X	WAA12 + 15 grains BP Shot Buffer				17.5/1205	9,400 LUP	9 pellets
Fed. 209	IMR PB	Rem. RP12 + 23 grains BP Shot Buffer				23.5/1310	10,100 LUP	8 pellets
Fed. 209	IMR PB	Rem. RP12 + 23 grains BP Shot Buffer				21.0/1170	9,900 LUP	10 pellets
Fed. 209	IMR SR-4756	Two BPGS + 25 grains BP Shot Buffer				28.5/1255	9,400 LUP	10 pellets
Fed. 209	IMR SR-4756	Two BPGS + 25 grains BP Shot Buffer				27.5/1200	9,800 LUP	12 pellets
Fed. 209	IMR SR-7625	Rem. RP12 + 20 grains BP Shot Buffer				29.5/1410	9,000 LUP	8 pellets
Fed. 209	IMR SR-7625	Rem. RP12 + 20 grains BP Shot Buffer				28.0/1320	9,500 LUP	8 pellets
12 Gauge 2 3/4": #00 Lead Buckshot								
Federal: Plastic (Paper Base Wad)								
Fed. 209	Herco	0.135" card + (1/4" + 3/16" + 1/2") fiber				30.0/1325	9,400 psi	9 pellets
Fed. 209A	HS-6	Fed. 12S3	37.0/1300	39.0/1350	39.5/1375	40.0/1400	8,000 psi	9 pellets
Fed. 209A	HS-6	Fed. 12S4		38.0/1400	39.0/1425	40.0/1450	9,500 psi	9 pellets
Fed. 209A	Universal	Fed. 12S3	27.5/1300	28.0/1350	30.0/1400	30.5/1450	9,800 psi	9 pellets
Remington: Premier & Nitro 27 & STS								
CCI 209M	HS-6	WAA12F114				31.0/1250	7,500 psi	9 pellets
CCI 209M	HS-6	WAA12F114		30.5/1300	31.3/1325	32.0/1350	9,500 psi	9 pellets
Remington: RXP								
Rem. 97*	Herco	0.135" card + (1/4" + 3/16") fiber				29.0/1325	10,100 psi	9 pellets
Winchester: Compression-Formed AA Type								
Win. 209	Herco	0.135" card + two 1/4" fiber wads				30.0/1325	10,000 psi	9 pellets
Win. 209	HS-6	WAA12F114		30.0/1250	30.5/1275	31.0/1300	8,700 psi	9 pellets

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LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
Winchester: Compression-Formed AA Type								
Win. 209	Universal	WAA12F114		24.0/1250	24.3/1275	24.6/1300	9,900 psi	9 pellets
12 Gauge 2 3/4": #000 Lead Buckshot								
Federal: Plastic (Paper Base Wad)								
Fed. 209	IMR 700-X	Four BPGS + 20 gr. BP Shot Buffer				23.0/1395	10,600 LUP	6 pellets
Remington: Unibody (Integral Plastic Base Wad)								
Fed. 209	IMR SR-4756	Two BPGS + 25 gr. BP Shot Buffer				28.0/1220	8,500 LUP	8 pellets
Fed. 209	IMR SR-7625	Two BPGS + 30 gr. BP Shot Buffer				24.0/1175	9,300 LUP	8 pellets
12 Gauge 3": #4 Lead Buckshot								
Federal: One-Piece								
Fed. 209A	HS-6	Fed. 12S4		35.0/1250	35.3/1275	35.5/1300	10,200 psi	34 pellets
Fed. 209A	HS-7	Fed. 12S4				38.0/1250	10,600 psi	34 pellets
Federal: Plastic (Paper Base Wad)								
Fed. 209	Blue Dot	BP BPGS + BP12				36.0/1225	9,700 psi	18 pellets
Remington: SP (Separate Black Plastic Base Wad)								
CCI 209M	HS-6	Fed. 12S4				34.0/1250	10,500 psi	34 pellets
CCI 209M	HS-7	Fed. 12S4				37.0/1250	10,500 psi	34 pellets
Remington: Unibody (Integral Plastic Base Wad)								
Rem. 97*	Alliant 2400	BP BPGS + BP12				46.0/1250	9,400 psi	33 pellets
Winchester: Compression-Formed AA Type								
Win. 209	Alliant 2400	BP BPGS + BP12				46.5/1250	9,000 psi	33 pellets
Win. 209	Alliant 2400	BP BPGS + BP12				49.0/1300	9,800 psi	33 pellets
Win. 209	HS-6	WAA12R		34.0/1250	34.8/1275	35.5/1300	10,100 psi	34 pellets
Win. 209	HS-7	WAA12R		37.5/1250	38.8/1275	40.0/1300	10,400 psi	34 pellets
12 Gauge 3": #1 Lead Buckshot								
Federal: One-Piece								
Fed. 209	Blue Dot	BP BPGS + BP12				37.0/1250	10,500 psi	33 pellets

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LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
Winchester: Compression-Formed AA Type								
Win. 209	IMR SR-7625	Z16 + OS16				22.0/1300	10,200 psi	
16 Gauge 2 3/4": 1 1/8 Ounce Buckshot								
Cheddite								
Ch. 209	IMR 800-X	Z16 + OS16				23.0/1300	10,300 psi	
Ch. 209	Longshot	Z16 + OS16				28.0/1465	11,200 psi	
Ch. 209	IMR 800-X	Two NC16 + HCW16 + OS16				24.0/1220	10,000 psi	Teflon Wrap
Winchester: Compression-Formed AA Type								
Win. 209	IMR SR-4756	OB16 + HCW16 + OS16				24.0/1205	10,150 psi	Teflon Wrap
16 Gauge 2 3/4": 1 1/4 Ounce Buckshot								
Win. 209	Steel	Two OB16 + 14C16 + OS16				30.0/1390	11,200 psi	Teflon Wrap
20 GAUGE GENERAL LIST								
20 Gauge 2 3/4": 7/8 Ounce Buckshot								
Cheddite								
Ch. 209	IMR 800-X	TC20 + OS20				24.0/1465	11,400 psi	Roll Crimp
Ch. 209	HS-6	TC20 + OS20				24.0/1310	9,600 psi	
Ch. 209	Longshot	TC20 + OS20				24.0/1350	10,300 psi	
Ch. 209	IMR 800-X	BW20 + OS20				22.0/1400	11,800 psi	Teflon Wrap: Ro Crimp
Ch. 209	Herco	BW20 + OS20				21.0/1425	11,500 psi	Teflon Wrap
Ch. 209	HS-6	BW20 + OS20				24.0/1345	10,100 psi	Teflon Wrap
Ch. 209	Longshot	BW20 + OS20				24.0/1475	10,300 psi	Teflon Wrap
Ch. 209	IMR SR-4756	BW20 + OS20				25.0/1345	9,700 psi	Teflon Wrap
Ch. 209	IMR SR-7625	BW20 + OS20				22.0/1345	10,500 psi	Teflon Wrap: Ro Crimp
Win. 209	Longshot	BW20 + OS20				24.0/1525	11,900 psi	Teflon Wrap
Fiocchi								
Fio. 616	Blue Dot	TC20 + OS20				26.0/1340	10,600 psi	
Fio. 616	IMR 800-X	Two HWC20				20.0/1210	9,500 psi	Teflon Wrap + OS20
Fio. 616	Green Dot	Two HWC20				17.5/1220	11,600 psi	Teflon Wrap + OS20
Fio. 616	Green Dot	OB20 + two 14C20 + NC20				16.0/1270	10,800 psi	Teflon Wrap + OS20
Fio. 616	Green Dot	OB20 + two 14C20				18.0/1285	10,950 psi	Teflon Wrap + OS20
Fio. 616	Herco	OB20 + 14C20 + NC20				20.0/1200	10,000 psi	Teflon Wrap + OS20
Fio. 616	Longshot	Two HWC20				24.0/1390	10,200 psi	Teflon Wrap + OS20
Fio. 616	Longshot	OB20 + two 14C20 + NC20				24.0/1240	10,000 psi	Teflon Wrap + OS20

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LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
Cheddite								
Ch. 209	Solo 1000	OB16 + two NC 16 + HCW16 + OS16				18.0/1260	11,200 psi	
Ch. 209	Universal	OB16 + NC 16 + HCW16 + OS16				22.5/1460	11,200 psi	Teflon Wrap
Fiocchi								
Fio. 616	IMR 800-X	Two HCW16 + OS16				25.0/1405	10,300 psi	Teflon Wrap
Fio. 616	Longshot	Two HCW16 + OS16				25.0/1385	9,300 psi	Teflon Wrap
Fio. 616	Universal	Three NC16 + two HWC16 + OS16				26.0/1485	11,500 psi	Teflon Wrap
Fio. 616	Solo 1000	Z16 + OS16				20.0/1360	9,900 psi	
Fio. 616	Solo 1000	Z16 + OS16				19.0/1350	10,000 psi	
16 Gauge 2 3/4": 1 Ounce Buckshot								
Cheddite								
Ch. 209	Longshot	Z16 + OS16				30.0/1500	10,800 psi	
Ch. 209	Solo 1000	Z16 + OS16				17.0/1200	9,600 psi	
Ch. 209	IMR SR-4756	Z16 + OS16				30.0/1440	10,500 psi	
Ch. 209	IMR SR-7625	Z16 + OS16				27.0/1440	10,300 psi	
Ch. 209	IMR SR -7625	Z16 + OS16				24.0/1320	9,600 psi	
Ch. 209	Unique	Z16 + OS16				22.0/1345	10,150 psi	
Ch. 209	Universal	Z16 + OS16				24.0/1515	10,900 psi	
Ch. 209	Green Dot	OB16 + two 14C16 + OS16				18.5/1250	11,000 psi	Teflon Wrap
Ch. 209	IMR PB	OB16 + HCW16 + 1/8" cw 20 + OS16				22.0/1290	10,600 psi	Teflon Wrap
Ch. 209	IMR SR-7625	Two NC16 + HCW16 + OS16				26.0/1375	11,300 psi	Teflon Wrap
Win. 209	Red Dot	Z16 + OS16				16.5/1210	10,400 psi	
Fiocchi								
CCI 209	IMR SR-4756	Z16 + OS16				22.0/1210	9,400 psi	
Fio. 616	Longshot	Z16 + OS16				26.0/1290	10,400 psi	
Fio. 616	Longshot	Z16 + OS16				27.0/1300	10,450 psi	
Fio. 616	Longshot	Z16 + OS16				30.0/1400	10,500 psi	
Fio. 616	Solo 1000	Z16 + OS16				20.0/1310	10,900 psi	
Fio. 616	Solo 1000	Z16 + OS16				19.0/1300	10,800 psi	
Fio. 616	IMR SR-4756	Z16 + OS16				28.0/1330	9,100 psi	
Fio. 616	IMR SR-7625	Z16 + OS16				22.0/1220	8,600 psi	
Fio. 616	Longshot	Z16 + OS16				28.0/1470	9,700 psi	
Fio. 616	Longshot	Z16 + OS16				26.0/1390	10,300 psi	
Fio. 616	Longshot	Z16 + OS16				24.0/1290	10,600 psi	
Winchester: Compression-Formed AA Type								
CCI 209	IMR SR-4756	Z16 + OS16				24.0/1282	10,100 psi	
CCI 209	IMR SR-4756	Z16 + OS16				26.0/1375	11,000 psi	
Win. 209	IMR PB	Z16 + OS16				21.0/1345	9,850 psi	
Win. 209	Longshot	Z16 + OS16				26.0/1375	11,000 psi	

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LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
Fiocchi								
Fio. 616	IMR SR-4756	OB20				24.0/1355	11,800 psi	Teflon Wrap + OS20
Winchester: Compression-Formed AA Type								
CCI 209	Steel	020 + 14C20 + 1/4" cw 20				22.0/1255	9,900 psi	Teflon Wrap + OS20
CCI 209	Steel	OB20 + 38C20 + 1/4" cw 20				22.0/1255	9,900 psi	Teflon Wrap + OS20
20 Gauge 3": 7/8 Ounce Buckshot								
Fiocchi								
Fio. 616	Longshot	NC20 + TC20 + OS20				26.0/1485	9,700 psi	
Fio. 616	Longshot	OB20 + TC20 + OS20				26.0/1455	9,000 psi	
Fio. 616	IMR PB	TC20 + OS20				24.0/1400	9,900 psi	
20 Gauge 3": 1 Ounce Buckshot								
Fiocchi								
Fio. 616	IMR SR-4756	TC20 + OS20				27.0/1310	9,200 psi	
Fio. 616	IMR SR-4756	Two HWC20 + OS20				25.0/1220	9,600 psi	Teflon Wrap
Fio. 616	IMR PB	Two HWC20 + OS20				22.0/1260	11,100 psi	Teflon Wrap
20 Gauge 3": 1 1/8 Ounce Buckshot								
Fiocchi								
CCI 209M	Steel	BW20 + OS20				26.0/1370	10,900 psi	Teflon Wrap
Fio. 616	Steel	BW20 + OS20				28.0/1400	10,250 psi	Teflon Wrap
20 GAUGE SPECIFIC LIST								
20 Gauge 2 3/4": #4 Lead Buckshot								
Federal: Plastic (Paper Base Wad)								
Fed. 209	Blue Dot	Rem. SP20				25.0/1275	9,300 psi	18 pellets
Fed. 209	Herco	Rem. SP20				19.0/1275	11,000 psi	18 pellets
Winchester: Compression-Formed AA Type								
Win. 209	Blue Dot	Rem. SP20				24.0/1275	9,600 psi	18 pellets
20 Gauge 2 3/4": #1 Lead Buckshot								
Federal: Plastic (Paper Base Wad)								
Fed. 209	Blue Dot	Rem. SP20 (petals removed)				25.5/1275	10,100 psi	12 pellets

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LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
Fiocchi								
Fio. 616	Solo 1250	Two NC20 + two 14C20				19.0/1100	9,000 psi	Teflon Wrap + OS20
Fio. 616	Solo 1250	Two NC20 + two 14C20				22.0/1290	10,300 psi	Teflon Wrap + OS20
Fio. 616	Solo 1250	Two OB20				20.0/1335	11,600 psi	Teflon Wrap + OS20
Fio. 616	Solo 1250	Three 14C20				20.0/1080	8,600 psi	Teflon Wrap + OS20
Fio. 616	Solo 1250	OB20 + two 14C20				20.0/1325	11,500 psi	Teflon Wrap + OS20
Fio. 616	IMR SR-4756	OB20 + 14C20 + 1/4" cw 20				24.0/1220	10,100 psi	Teflon Wrap + OS20
Remington: RXP								
Rem. 209P	Unique	TC20 + OS20				16.0/1200	11,300 psi	
Remington: Unibody								
Rem. 209P	Longshot	BW20				23.0/1340	11,900 psi	Teflon Wrap + OS20
Winchester: Compression-Formed AA Type								
CCI 209	Herco	Three NC20 + HCW20				16.0/1100	10,300 psi	Teflon Wrap + OS20
CCI 209	Herco	OB20 + 38C20 + 1/4" cw 20				15.5/1130	9,600 psi	Teflon Wrap + OS20
CCI 209	Herco	OB20 + 38C20 + 1/4" cw 20				15.5/1130	9,600 psi	Teflon Wrap + OS20
CCI 209	HS-6	BW20				22.0/1355	10,400 psi	Teflon Wrap + OS20
20 Gauge 2 3/4": 1 Ounce Buckshot								
Cheddite								
Ch. 209	Solo 1250	OB20 + NC20 + 1/4" cw 20 + OS20				18.0/1325	11,500 psi	Teflon Wrap
Ch. 209	IMR SR-4756	Two OB20 + OS20				20.0/1150	9,800 psi	Teflon Wrap
Ch. 209	IMR SR-4756	OB20 + 14C20 + NC20 + OS20				23.0/1255	10,200 psi	Teflon Wrap
Ch. 209	IMR SR-4756	OB20 + 14C20 + OS20				23.0/1255	10,300 psi	Teflon Wrap
Fiocchi								
Fio. 616	Herco	OB20 + two 14C20 + NC20				19.0/1220	10,600 psi	Teflon Wrap + OS20
Fio. 616	IMR SR-4756	Four NC20 + 14C20				22.0/1200	9,300 psi	Teflon Wrap + OS20 & Roll Crimp

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LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
Federal								
Rem. 209P	Blue Dot	BW28				20.0/1246	8,480 psi	
Winchester: Compression-Formed AA Type								
Win. 209	IMR SR-4756	Three NC28 + two 14C28				18.5/1210	11,200 psi	Teflon Wrap + OS28
28 Gauge 2 3/4": 7/8 Ounce Buckshot								
Cheddite								
Ch. 209	Blue Dot	HV28 + OS28				20.0/1220	11,850 psi	
Ch. 209	H110	HV28 + OS28				30.0/1320	8,340 psi	
Ch. 209	Lil' Gun	HV28 + OS28				28.0/1200	11,280 psi	
Ch. 209	IMR SR-4756	HV28 + OS28				17.5/1250	12,500 psi	
Ch. 209	Steel	HV28 + OS28				20.0/1390	12,200 psi	
Winchester: Compression-Formed AA Type								
Win. 209	Lil' Gun	HV28 + OS28				24.0/1180	11,100 psi	
Win. 209	Blue Dot	Two N728 + 38C28				21.5/1230	12,200 psi	Teflon Wrap + OS28
Win. 209	Lil' Gun	Three NC28 + two 14C28				24.0/1050	9,050 psi	Teflon Wrap + OS28
28 Gauge 2 3/4": 1 Ounce Buckshot								
Ch. 209	Steel	HV28				21.0/1250	12,500 psi	
Ch. 209	Steel	HV28				22.5/1230	12,000 psi	Roll Crimp
.410 BORE GENERAL LIST								
.410 Bore 3": 1/2 Ounce Buckshot								
Cheddite								
Ch. 209	Accurate 4100	Stretch + OS41				17.0/1310	9,000 psi	
Ch. 209	H110	Stretch + OS41				16.0/1200	5,500 psi	
Ch. 209	H110	Stretch + OS41				18.0/1280	6,400 psi	
Ch. 209	H110	Four NC410 + OS41				20.0/1200	9,200 psi	
.410 Bore 3": s5/8 Ounce Buckshot								
Ch. 209	H110	Three NC410 + OS41				16.0/1200	9,300 psi	
Ch. 209	H110	Stump				16.0/1225	9,600 psi	
Ch. 209	H110	Stump				18.0/1325	10,300 psi	
.410 Bore 3": 3/4 Ounce Buckshot								
Cheddite								
Ch. 209	Accurate 4100	Stump				15.0/1165	11,600 psi	

This data is lead buckshot-specific. It does not interchange with data used for any other types of lead or non-toxic shot. Use only with the components and amounts listed. Avoid use in tightly choked guns (smaller than Modified) as poor patterns will result.

LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
Winchester: Compression-Formed AA Type								
Win. 209	Blue Dot	Rem. SP20 (petals removed)				25.5/1275	10,400 psi	12 pellets
20 Gauge 3": #3 Lead Buckshot								
Federal: Plastic (Paper Base Wad)								
Fed. 209	Blue Dot	Rem. SP20				26.0/1220	7,800 psi	21 pellets
Fed. 209	Blue Dot	Rem. SP20 (petals removed)				24.0/1200	11,200 psi	24 pellets
Fed. 209	Herco	Rem. RXP20				19.5/1220	8,400 psi	18 pellets
Winchester: Compression-Formed AA Type								
Win. 209	Blue Dot	Rem. SP20				25.0/1200	9,400 psi	21 pellets
Win. 209	Herco	WAA20F1				19.0/1220	9,500 psi	18 pellets
28 GAUGE GENERAL LIST								
28 Gauge 2 1/2": 3/4 Ounce Buckshot								
Fiocchi								
Fio. 616	HS-6	SG28-II + OS28				19.0/1280	10,820 psi	Roll Crimp
Fio. 616	IMR SR-7625	SG28-II + OS28				16.0/1200	11,400 psi	Roll Crimp
Fio. 616	IMR SR-7625	SG28-II + OS28				16.0/1260	11,250 psi	
Fio. 616	IMR 800-X	Two NC28 + two 14C28 + OS28				17.0/1235	11,000 psi	Teflon Wrap + Roll Crimp
Fio. 616	IMR 800-X	Three 14C28 + OS28				15.0/1220	10,600 psi	Teflon Wrap + Roll Crimp
28 Gauge 2 1/2": 7/8 Ounce Buckshot								
Fiocchi								
Fio. 616	Longshot	HV28 + OS28				15.0/1235	11,933 psi	Roll Crimp
Fio. 616	Longshot	SG28-II + OS28				14.5/1240	12,400 psi	Roll Crimp
Fio. 616	Longshot	SG28-II + OS28				14.5/1245	12,400 psi	Roll Crimp
Fio. 616	IMR SR-7625	HV28 + OS28				16.0/1220	12,400 psi	Roll Crimp
Fio. 616	Longshot	Three NC28 + two 14C28 + OS28				14.5/1100	8,620 psi	Teflon Wrap + Roll Crimp
28 Gauge 2 3/4": 3/4 Ounce Buckshot								
Cheddite								
Ch. 209	IMR 800-X	BW28				17.0/1385	11,300 psi	
Ch. 209	herco	BW28				16.0/1310	12,200 psi	
Ch. 209	Longshot	N728 + SG28-II				18.0/1390	11,700 psi	
Ch. 209	Longshot	BW28				19.0/1345	10,950 psi	
Ch. 209	IMR SR-4756	BW28				18.0/1300	10,650 psi	
Ch. 209	IMR SR-7625	BW28				14.0/1275	9,350 psi	
Ch. 209	IMR SR-7625	BW28				16.0/1400	11,900 psi	
Ch. 209	Longshot	Three NC28 + two 14C28				16.5/1355	11,000 psi	Teflon Wrap + OS28

This data is lead buckshot-specific. It does not interchange with data used for any other types of lead or non-toxic shot. Use only with the components and amounts listed. Avoid use in tightly choked guns (smaller than Modified) as poor patterns will result.

LEAD BUCKSHOT

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum			Maximum	Maximum Pressure	Buckshot Count/ Load Notes
Federal								
Rem. 209P	Blue Dot	BW28				20.0/1246	8,480 psi	
Winchester: Compression-Formed AA Type								
Win. 209	IMR SR-4756	Three NC28 + two 14C28				18.5/1210	11,200 psi	Teflon Wrap + OS28
28 Gauge 2 3/4": 7/8 Ounce Buckshot								
Cheddite								
Ch. 209	Blue Dot	HV28 + OS28				20.0/1220	11,850 psi	
Ch. 209	H110	HV28 + OS28				30.0/1320	8,340 psi	
Ch. 209	Lil' Gun	HV28 + OS28				28.0/1200	11,280 psi	
Ch. 209	IMR SR-4756	HV28 + OS28				17.5/1250	12,500 psi	
Ch. 209	Steel	HV28 + OS28				20.0/1390	12,200 psi	
Winchester: Compression-Formed AA Type								
Win. 209	Lil' Gun	HV28 + OS28				24.0/1180	11,100 psi	
Win. 209	Blue Dot	Two N728 + 38C28				21.5/1230	12,200 psi	Teflon Wrap + OS28
Win. 209	Lil' Gun	Three NC28 + two 14C28				24.0/1050	9,050 psi	Teflon Wrap + OS28
28 Gauge 2 3/4": 1 Ounce Buckshot								
Ch. 209	Steel	HV28				21.0/1250	12,500 psi	
Ch. 209	Steel	HV28				22.5/1230	12,000 psi	Roll Crimp
.410 BORE GENERAL LIST								
.410 Bore 3": 1/2 Ounce Buckshot								
Cheddite								
Ch. 209	Accurate 4100	Stretch + OS41				17.0/1310	9,000 psi	
Ch. 209	H110	Stretch + OS41				16.0/1200	5,500 psi	
Ch. 209	H110	Stretch + OS41				18.0/1280	6,400 psi	
Ch. 209	H110	Four NC410 + OS41				20.0/1200	9,200 psi	
.410 Bore 3": s5/8 Ounce Buckshot								
Ch. 209	H110	Three NC410 + OS41				16.0/1200	9,300 psi	
Ch. 209	H110	Stump				16.0/1225	9,600 psi	
Ch. 209	H110	Stump				18.0/1325	10,300 psi	
.410 Bore 3": 3/4 Ounce Buckshot								
Cheddite								
Ch. 209	Accurate 4100	Stump				15.0/1165	11,600 psi	

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Chapter 20

SLUG DATA

SLUGS & SABOTS

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum	Powder Charge (grains)/ Velocity (fps) Maximum	Maximum Pressure	Load Notes
12 Gauge 2 1/2": Round Ball .690» Slug						
Federal: Gold Medal						
Win. 209	Solo 1000	BPGS + 1/2» 12g hard card + OSC		23.0/—	8,100 psi	Roll Crimp + Teflon Wrap
Win. 209	Green Dot	GBP LB12 + OSC		25.1/—	10,100 psi	Roll Crimp
12 Gauge 2 3/4": 5/8 Ounce BP DGS20 Slug						
Fiocchi: Plastic (Paper Base Wad)						
Fed. 209	Herco	0.125» card + 1/2» fiber + two 0.125» card		25.5/1570	9,800 psi	
Winchester: Compression-Formed AA Type						
Win. 209	Herco	0.125» card + 1/2» fiber + two 0.125» card		25.5/1570	10,200 psi	
12 Gauge 2 3/4": 7/8 Ounce Cast Rifled Slug						
Federal: Plastic (Paper Base Wad)						
Fed. 209	Unique	0.135» card + (5/16» + 1/4») fiber + two 0.135» card		33.0/1570	10,000 psi	Roll Crimp
Fed. 209	Herco	0.135» card + 5/16» fiber + two 0.135» card		35.5/1570	8,000 psi	Roll Crimp
Remington: RXP						
Rem. 97*	Unique	0.135» card + two 1/4» fiber + two 0.135» card		34.0/1570	10,800 psi	Roll Crimp
Rem. 97*	Herco	0.135» card + two 1/4» fiber + two 0.135» card		35.0/1570	9,700 psi	Roll Crimp

This data is lead slug-specific. It does not interchange with data used for any other type of shot. Use only with the components and amounts listed. For best results, do not use any slug load in a tightly choked barrel (Cylinder, Improved Cylinder or Modified chokes work best).

SLUGS & SABOTS

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum	Powder Charge (grains)/ Velocity (fps) Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type						
Win. 209	Unique	0.135» card + 1/4» fiber + two 0.135» card		34.5/1570	9,800 psi	Roll Crimp
Win. 209	Herco	0.135» card + 1/4» fiber + two 0.135» card		29.0/1570	8,600 psi	Roll Crimp
12 Gauge 2 3/4»: 7/8 Ounce Slugmaster Slug						
Federal: Gold Medal Plastic						
Win. 209	HS-6	BPGS + two 1/2» felt + 0.135» card		37.0/1450	10,200 psi	
Win. 209	Universal	BPGS + 1/2» felt + two felt 0.135» cards		31.0/1500	10,100 psi	
Fiocchi: Purple Target (High Base Wad)						
Fio. 616	Universal	0.135» card + 1/2» felt 0.135» card		31.0/1550	10,100 psi	
Remington: Premier & Nitro 27 & STS						
CCI 209M	HS-6	0.135» card + 1/2» felt 0.135» card		40.5/1550	9,500 psi	
CCI 209M	Universal	0.135» card + 1/2» felt 0.135» card		29.0/1550	10,100 psi	
Win. 209	HS-6	0.135» card + 1/2» felt 0.135» card		40.0/1550	10,100 psi	
Winchester: Compression-Formed AA Type						
Win. 209	HS-6	0.135» card + 1/2» felt 0.135» card		47.0/1500	10,300 psi	
Win. 209	Univesal	Two 0.135» cards + 1/2» fiber		29.5/1450	10,400 psi	
12 Gauge 2 3/4»: 7/8 Ounce (in shotcup) Improved Foster Slug						
Cheddite						
CCI 209	Green Dot	HCD24 wad + OSC		22.2/1380	8,500 psi	
Fiocchi						
Fio. 616	Solo 1000	HCD24 wad + OSC		21.4/1400	10,000 psi	
Remington: RTL						
Win. 209	IMR PB	Trap Commander + OSC		22.1/1330	8,100 psi	
Winchester: Compression-Formed AA Type						
Fed. 209A	IMR 700-X	Trap Commander + OSC		18.1/1310	9,100 psi	
Win. 209	Red Dot	Trap Commander + OSC		18.1/1280	9,700 psi	

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SLUGS & SABOTS

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum	Powder Charge (grains)/ Velocity (fps) Maximum	Maximum Pressure	Load Notes
12 Gauge 2 3/4»: 1 Ounce AQ Finned Slug						
Fiocchi						
Fio. 616	Green Dot	BPGS + two 12g cork		26.0/1440	10,200 LUP	
Fio. 616	Solo 1000	Three BPGS		21.0/1350	10,600 psi	
Fio. 616	Unique	BPGS + 1/2» 12g hard card + 0.100 12g nitro card		30.0/1396	8,908 LUP	
Remington						
Fio. 616	IMR SR-7625	BPGS + 1/2» 12g hard card		35.0/1580	10,600 LUP	Roll Crimp + OSC
12 Gauge 2 3/4": 1 Ounce Lee Precision Slug						
Federal: Gold Medal Plastic						
Fed. 209A	Universal	Fed. 12S3		28.0/1450	10,200 psi	
Fed. 209A	HS-6	Fed. 12S3		40.0/1550	11,000 psi	
Remington: Premier & Nitro 27 & STS						
Win. 209	HS-6	WAA12SL		36.0/1450	10,200 psi	
Winchester: Compression-Formed AA Type						
Win. 209	HS-6	WAA12F114		36.0/1500	10,800 psi	
12 Gauge 2 3/4": 1 Ounce Slugmaster Slug						
Federal: Gold Medal Plastic						
Fed. 209A	Herco	WAA12 (white)		34.0/1538	10,400 psi	
Fed. 209A	Blue Dot	WAA12 (white)		49.0/1690	10,200 psi	
Win. 209	HS-6	BPGS + two 1/2» felt + 0.135» card		35.5/1400	10,200 psi	
Win. 209	Universal	BPGS + 1/2» felt + two 0.135» cards		29.0/1450	11,000 psi	
Fiocchi: Purple Target (High Base Wad)						
Fio. 616	Universal	0.135» card + 1/2» felt + 0.135» card		30.0/1550	10,200 psi	
Remington: Premier & Nitro 27 & STS						
CCI 209M	Universal	0.135» card + 1/2» felt + 0.135» card		30.0/1500	10,900 psi	
Win. 209	HS-6	0.135» card + 1/2» felt 0.135» card		36.0/1450	10,100 psi	
Win. 209	Herco	WAA12 (white)		34.0/1522	10,400 psi	
Win. 209	Blue Dot	WAA12 (white)		49.0/1673	10,200 psi	

This data is lead slug-specific. It does not interchange with data used for any other type of shot. Use only with the components and amounts listed. For best results, do not use any slug load in a tightly choked barrel (Cylinder, Improved Cylinder or Modified chokes work best).

SLUGS & SABOTS

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum	Powder Charge (grains)/ Velocity (fps) Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type						
Win. 209	HS-6	0.135» card + 1/2» felt + 0.135» card		35.0/1450	10,200 psi	
Win. 209	Univesal	0.135» card + 1/2» felt + 0.135» card		27.0/1400	10,500 psi	
Win. 209	Herco	WAA12 (white)		36.0/1587	10,600 psi	
12 Gauge 2 3/4": 1 Ounce (in shotcup) Improved Foster Slug						
Cheddite						
CCI 209	Green Dot	HCD21 + OSC		22.5/1300	9,100 psi	
Federal: Gold Medal						
Fed. 209A	American Select	HCD21 + OSC		21.5/1300	9,100 psi	
Fiocchi: Low Base						
Fio. 616	Clays	HCD21 + OSC		19.5/1290	9,300 psi	
Fio. 616	Solo 1000	HCD21 + OSC		22.5/1325	8,300 psi	
Winchester: Compression-Formed AA Type						
Win. 209	International	HCD21 + OSC		21.0/1285	8,800 LUP	
Win. 209	WSL	HCD21 + OSC		21.0/1290	9,600 psi	
12 Gauge 2 3/4": 1 Ounce Barnes Expander						
Cheddite						
Ch. 209	IMR 700-X	X12X + 1/4» 12g 1/4» cork + OSC		19.2/1290	10,500 psi	
Ch. 209	Ameican Select	X12X + 1/4» 12g 1/4» cork + OSC		21.0/1290	9,700 psi	
Fiocchi						
Fio. 616	Red Dot	X12X + OSC		19.0/1295	10,000 psi	
Winchester: Compression-Formed AA Type						
Win. 209	Green Dot	Two X12X + OSC		21.5/1290	10,200 psi	
Win. 209	Solo 1000	Two X12X + OSC		20.5/1290	9,300 psi	
12 Gauge 2 3/4": 1 1/16 Ounce Lyman Slug						
Federal: Gold Medal Plastic						
CCI 209	IMR SR-7625	BP x 12X Gas Seal		29.5/1475	10,500 LUP	
Fiocchi: Purple Target (High Base Wad)						
Fio. 616	Green Dot	BP HCD24		25.0/1400	10,600 psi	
Fio. 616	Green Dot	BP HCD24		24.5/1400	10,100 psi	

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SLUGS & SABOTS

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum	Powder Charge (grains)/ Velocity (fps) Maximum	Maximum Pressure	Load Notes
Fiocchi: Purple Target (High Base Wad)						
Fio. 616	Green Dot	BP HCD24		28.0/1345	9,500 psi	
Fio. 616	Unique	BP HCD24		27.0/1290	8,540 psi	
Fio. 616	Unique	BP HCD24		28.6/1390	10,300 psi	
Winchester: Compression-Formed AA Type						
Win. 209	IMR SR-7625	BP x 12X Gas Seal		29.0/1500	10,200 LUP	
12 Gauge 2 3/4": 1 1/8 Ounce BP DSG12 Slug						
Fiocchi: Purple Target (High Base Wad)						
Fio. 616	IMR PB			32.0/1450	10,900 LUP	
Fio. 616	Solo 1250			30.0/1550	10,500 LUP	
Fio. 616	IMR SR-7625			32.0/1390	10,000 LUP	
Fio. 616	WSF			32.0/1450	9,900 LUP	
Fio. 616	Unique			32.0/1460	9,500 LUP	
12 Gauge 2 3/4": 300 gr. Collet Cup Sabot						
Fiocchi						
Fio. 616	Clays	Two BPGS + 14C12 + OSC		21.5/1415	9,900 LUP	
Fio. 616	WSL	Two BPGS + 14C12 + OSC		22.5/1350	9,500 LUP	
Federal: Gold Medal						
Win. 209	IMR 700-X	Two BPGS + 14C12 + OSC		21.0/1350	9,500 LUP	
Win. 209	Solo 1000	Two BPGS + 14C12 + OSC		22.5/1400	9,500 LUP	
12 Gauge 2 3/4": 448 gr. BP AQ Slug						
Fiocchi: Plastic (High Base Wad)						
Fo. 616	Green Dot	BPGS + 1/2» 12-gauge hard card		26.0/1400	8,600 LUP	Roll Crimp
Fiocchi: Plastic (Low Base Wad)						
Fio. 616	IMR PB	BPGS + 12-gauge 1/4» cork		26.5/1450	9,500 LUP	Roll Crimp
Fio. 616	Solo 1250	BPGS + 12-gauge 1/4» cork		32.0/1560	9,700 LUP	Roll Crimp & Teflon Wrap
Fio. 616	Unique	BPGS + 1/2» 12-gauge hard card		29.0/1350	8,620 LUP	Roll Crimp
Fio. 616	Unique	BPGS + three 0.125» Nitro cards		30.5/1489	11,200 LUP	Roll Crimp

This data is lead slug-specific. It does not interchange with data used for any other type of shot. Use only with the components and amounts listed. For best results, do not use any slug load in a tightly choked barrel (Cylinder, Improved Cylinder or Modified chokes work best).

SLUGS & SABOTS

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum	Powder Charge (grains)/ Velocity (fps) Maximum	Maximum Pressure	Load Notes
Winchester: Compression-Formed AA Type						
Fio. 616	Unique	BPGS + 1/2» 12-gauge hard card		21.0/1560	10,800 LUP	Roll Crimp
12 Gauge 2 3/4»: Dangerous Game Slug						
Fiocchi						
Fio. 616	IMR PB	0.715» gas seal w/0.075» anti-migration ring		32.0/1450	10,900 LUP	Roll Crimp + OSC
Fio. 616	Solo 1250	0.715» gas seal w/0.075» anti-migration ring		30.0/1550	10,500 LUP	Roll Crimp + OSC
Winchester: Compression-Formed AA Type						
CCI 209	Solo 1250	0.715» gas seal w/0.075» anti-migration ring		28.0/1450	10,000 LUP	Roll Crimp + OSC
12 Gauge 2 3/4»: Thunderbolt Slug						
Federal: Gold Medal						
CCI 209	HS-6	OSC		32.0/1250	10,000 LUP	Fold Crimp
CCI 209M	Herco	OSC		26.0/1230	10,800 LUP	Fold Crimp
Fiocchi						
Fio. 616	HS-7	OSC		37.5/1260	10,500 LUP	Roll Crimp
Fio. 616	IMR PB	OSC		22.5/1200	10,000 LUP	Roll Crimp
12 Gauge 3»: 7/8 Ounce Cast Rifled Lead Slug						
Fiocchi: Plastic (Paper Base Wad)						
Fed. 209	Herco	0.135» card + (1/2» + 3/8») fiber + 0.135» card		40.0/1570	10,500 psi	Roll Crimp
Remington: Unibody (Integral Plastic Base Wad)						
Rem. 97*	Herco	0.135» card + (1/2» + 3/8») fiber + 0.135» card		37.5/1570	10,600 psi	Roll Crimp
Winchester: Compression-Formed AA Type						
Win. 209	Herco	0.135» + 1/2» fiber + 0.135» card		37.5/1570	9,700 psi	Roll Crimp

This data is lead slug-specific. It does not interchange with data used for any other type of shot. Use only with the components and amounts listed. For best results, do not use any slug load in a tightly choked barrel (Cylinder, Improved Cylinder or Modified chokes work best).

SLUGS & SABOTS

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum	Powder Charge (grains)/ Velocity (fps) Maximum	Maximum Pressure	Load Notes
12 Gauge 3": 1 Ounce AQ Finned Slug						
Federal						
Fio. 616	IMR SR-7625	BPGS + 1/2» 12g hard card		35.0/1560	10,600 LUP	Roll Crimp + OSC
Fiocchi						
Fio. 616	IMR PB	BPGS + three 12g 1/4» cork		36.0/1590	10,900 LUP	OSC
12 Gauge 3": 448 gr. BP AQ Slug						
Fiocchi: Plastic (Low Base Wad)						
Fio. 616	IMRPB	BPGS + three 12-gauge 1/4» corks		36.0/1590	10,900 LUP	Roll Crimp
12 Gauge 3": Round Ball .715» Slug						
Fiocchi						
Fio. 616	Herco	BW12 + BPGS + OSC		33.0/1400	10,500 LUP	Roll Crimp
Fio. 616	IMR SR-7625	BW12 + BPGS + OSC		35.0/1400	9,500 psi	Roll Crimp
12 Gauge 3": 1 Ounce Barnes Expander						
Fiocchi						
Fio. 616	International	Two X12X + 1/4» 12g 1/4» cork + OSC		21.0/1375	10,200 psi	
Fio. 616	Green Dot	Two X12X + 1/4» 12g 1/4» cork + OSC		22.5/1390	10,000 psi	
12 Gauge 3": Thunderbolt Slug						
Cheddite						
CCI 209	HS-6	X12X Gas Seal + OSC		35.5/1300	10,000 psi	Roll Crimp
Fiocchi						
Fio. 616	HS-6	X12X Gas Seal + OSC		35.0/1300	10,400 psi	Roll Crimp
Fio. 616	IMR SR-4756	BPGS Gas Seal + OSC		38.0/1420	10,500 psi	Roll Crimp
16 Gauge 2 3/4": Slug Data						
Ballistic Products: Multi-Hull						
Win. 209	Clays	DGS16 slug w/carrier		19.5/1430	11,400 psi	Roll Crimp
Win. 209	Green Dot	DGS16 slug w/carrier		23.0/1400	11,100 psi	Roll Crimp
Win. 209	International	DGS16 slug w/carrier		23.5/1410	11,200 psi	Roll Crimp
Win. 209	Solo 1000	DGS16 slug w/carrier		21.5/1405	11,300 psi	Roll Crimp
Win. 209	Unique	DGS16 slug w/carrier		21.0/1255	9,500 psi	Roll Crimp
Win. 209	Unique	DGS16 slug w/carrier		23.0/1335	10,800 psi	Roll Crimp
Cheddite						
Fio. 616	Clays	DGS16 slug w/carrier		18.5/1400	11,300 psi	Roll Crimp
Fio. 616	Green Dot	DGS16 slug w/carrier		22.5/1365	11,000 psi	Roll Crimp
Fio. 616	International	DGS16 slug w/carrier		23.0/1375	11,200 psi	Roll Crimp

This data is lead slug-specific. It does not interchange with data used for any other type of shot. Use only with the components and amounts listed. For best results, do not use any slug load in a tightly choked barrel (Cylinder, Improved Cylinder or Modified chokes work best).

SLUGS & SABOTS

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum	Powder Charge (grains)/ Velocity (fps) Maximum	Maximum Pressure	Load Notes
Cheddite						
Fiocchi						
Fio. 616	Clays	DGS16 slug w/carrier		19.0/1420	11,500 psi	Roll Crimp
Fio. 616	Green Dot	DGS16 slug w/carrier		23.0/1395	11,200 psi	Roll Crimp
Fio. 616	International	DGS16 slug w/carrier		23.5/1400	11,400 psi	Roll Crimp
Fio. 616	Solol 1000	DGS16 slug w/carrier		21.5/1420	11,500 psi	Roll Crimp
Fio. 616	Unique	DGS16 slug w/carrier		21.0/1245	9,600 psi	Roll Crimp
Fio. 616	Unique	DGS16 slug w/carrier		23.0/1330	10,700 psi	Roll Crimp
16 Gauge 2 3/4": 335 gr. Foster Slug						
Fiocchi						
Fio. 616	Unique	Two 16g .10» Nitro Card + two 16 g 1/2» fiber wad + OSC		23.5/1300	7,600 LUP	Teflon Wrap
16 Gauge 2 3/4": Dangerous Game Slug						
Fiocchi						
Fio. 616	IMR PB	Gas seal and cushion are attached		21.0/1275	9,200 LUP	OSC
Fio. 616	Unique	Gas seal and cushion are attached		20.0/1325	9,400 LUP	OSC
Fio. 616	IMR SR-7625	Gas seal and cushion are attached		22.5/1325	9,600 LUP	OSC
16 Gauge 67mm: Slug Data						
Fiocchi						
Fio. 616	Clays	DGS16 slug w/carrier		19.0/1420	11,500 psi	Roll Crimp
Fio. 616	Green Dot	DGS16 slug w/carrier		23.0/1395	11,200 psi	Roll Crimp
Fio. 616	International	DGS16 slug w/carrier		23.5/1400	11,400 psi	Roll Crimp
20 Gauge 2 3/4": 276 gr. Foster Type Slug						
Federal						
CCI 209	Herco	Two 20g .10» nitro card + one 20g waxed card 1/2» + folded Teflon Wrap		23.0/1425	10,200 LUP	OSC + Roll Crimp
Fiocchi						
Fio. 616	Unique	Two 20g .10» nitro card + one 20g waxed hard card 1/2» + folded Teflon Wrap		21.3/1395	10,000 LUP	OSC + Roll Crimp
20 Gauge 2 3/4": Dangerous Game Slug						
Fiocchi						
Fio. 616	Herco	OSC		23.0/1450	10,000 LUP	
Fio. 616	Unique	OSC		21.5/1400	9,300 LUP	

This data is lead slug-specific. It does not interchange with data used for any other type of shot. Use only with the components and amounts listed. For best results, do not use any slug load in a tightly choked barrel (Cylinder, Improved Cylinder or Modified chokes work best).

SLUGS & SABOTS

Hull/Primer	Powder Type	Wad	Powder Charge (grains)/ Velocity (fps) Minimum	Powder Charge (grains)/ Velocity (fps) Maximum	Maximum Pressure	Load Notes
Fiocchi						
Fio. 616	Super Target	OSC		26.5/1400	9,100 LUP	
28 Gauge 2 1/2": Improved Foster Type Slug						
Fiocchi						
Fio. 616	Blue Dot	SG28 w/slug inserted + OSC		20.0/1390	8,700 psi	Roll Crimp
Fio. 616	Longshot	SG28 w/slug inserted + OSC		16.0/1350	12,400 psi	Roll Crimp
28 Gauge 2 3/4": Improved Foster Type Slug						
Cheddite						
Ch. 209	Herco	SG28 w/slug inserted + OSC		16.0/1380	9,900 psi	Roll Crimp
Ch. 209	Unique	SG28 w/slug inserted + OSC		14.0/1230	11,200 psi	
Fiocchi						
Fio. 616	Blue Dot	SG28 w/slug inserted + OSC		22.0/1400	8,600 psi	Roll Crimp
Fio. 616	Herco	SG28 w/slug inserted + OSC		17.0/1380	9,800 psi	Roll Crimp
28 Gauge 2 3/4": Light Game Slug (ball & carrier)						
Cheddite						
Ch. 209	Solo 1250	OSC		18.0/1445	11,800 LUP	
Ch. 209	Unique	OSC		16.0/1470	11,100 LUP	
Fiocchi						
Fio. 616	Herco	OSC		17.4/1385	11,000 LUP	
.410 Bore 3": Light Game Slug & Carrier						
Federal						
Win. 209	#2400	One .410-.100 nitro card + OSC		20.5/1320	10,300 psi	
Remington						
Win. 209	IMR SR-4227	One .410-.100 nitro card + OSC		19.0/1280	10,300 psi	
Winchester						
Win. 209	IMR SR-4227	One .410-.100 nitro card + OSC		19.4/1350	11,100 psi	

This data is lead slug-specific. It does not interchange with data used for any other type of shot. Use only with the components and amounts listed. For best results, do not use any slug load in a tightly choked barrel (Cylinder, Improved Cylinder or Modified chokes work best).

Chapter 21

Tables

BARREL DIMENSIONS; COMPONENTS; LEAD/STEEL/TUNGSTEN-IRON SHOT PELLET COUNTS; PATTERN DENSITY; PATTERN SPREAD; POWDER CONVERSIONS; SERVICE PRESSURES; MEC SHOT BARS; PONSNESS-WARREN BUSHINGS; MEC SHOT CONVERSIONS; SHOTSHELL GAME GUIDE; SLUG INFO

AMERICAN STANDARD BORE, CHAMBER & CHOKE CONSTRICTIONS

(Dimensions in inches)

Gauge	Chamber Length	Standard Bore ID	Cyl	SK1	ImpCyl	SK2	Mod	ImpMod	Full	ExtFull
10	2.875 - 3.5	.775	.000	-	-	-	.030	.035	.045	-
12	2.750 - 3.5	.729	.000	.005	.009	.015	.020	.025	.035	.040
16	2.750	.662	.000	.004	.007	.010	.015	.020	.028	-
20	2.750 - 3.0	.615	.000	.004	.006	.009	.014	.019	.025	-
28	2.875	.550	.000	.003	.005	.007	.012	.016	.022	-
*.410	3.0	.410	.000	-	.004	-	.008	-	.017	-

It is not uncommon for choke manufacturers to publish standards that vary slightly from this chart. Before purchasing after-market chokes and for a true precision fit, it is always wise to have your barrels measured with a micrometer. * Technically, the .410 is a bore size, not a "gauge." Except for custom manufacturing, the 10-gauge and .410-bore are not customarily provided with choke constrictions where data is missing.

SHOTSHELL RELOADING INGREDIENTS CHART

PROPELLANTS

IMR	Hodgdon	Alliant	Winchester	Accurate	Ramshot	ADCO	Vihtavuori Oy	NOBEL
Hi-Skor 700-X	Clays	Bullseye	Super Lite (WSL)	Royal Scot	Competition	Nobel Sport A0	3NSL	#60
Hi-Skor 800-X	Titewad	Red Dot	Super Target (WST)	Nitro 100		Nobel Sport A1	3NSM	#62
PB	International Clays	Green Dot	Super Field (WSF)	Accur #2		Nobel Sport AS	3NSH	#64
SR-7625	TiteGroup	American Select	AA Plus (WAAP)	Accur #5		AS 24		#78
SR-4756	Universal	Steel	296	Solo 1000				#80
IMR 4227	HS-6	Promo	540	Solo 1250				#82
	HS-7	Blue Dot	571	Solo 1500				
	Longshot	Herco		4100				
	H110	Unique						
	Lil' Gun	2400						
	H4227	410						
		e3						

PATTERN DENSITY*

Percent of Pellets in a 30-inch circle

American Choke	Constriction	Range in Yards				
		20	30	40	50	60
Cylinder	.000 in.	80	60	40	27	18
Skeet 1	.005 in.	92	72	50	33	22
Improved Cylinder	.010 in.	100	77	55	38	25
Modified	.020 in.	100	83	60	41	27
Improved Modified	.030 in.	100	91	65	46	30
Full	.040 in.	100	100	70	49	32

*Calculate the number of pellets in a 30-inch circle at a given range for any combination of shot size and choke constriction. Example: Find the number of pellets expected inside a 30-inch circle from a 1 1/8-ounce load of #8 shot at 40-yards when shot at Full choke. (462 pellets) x (70 percent or .70) = 323 pellets.

US SHOTGUN SERVICE PRESSURES

Gauge & Shell	Pressure (psi)
10 - 3 1/2"	11,000
12 - 3 1/2"	14,000
12 - 3"	11,500
12 - 2 3/4"	11,500
16 - 2 3/4"	11,500
20 - 3"	12,000
20 - 2 3/4"	12,000
28 - 2 3/4"	12,500
.410 - 3"	13,500
.410 - 2 1/2"	12,500

NOTE: SAAMI proof pressures are 30- to 50-percent higher.

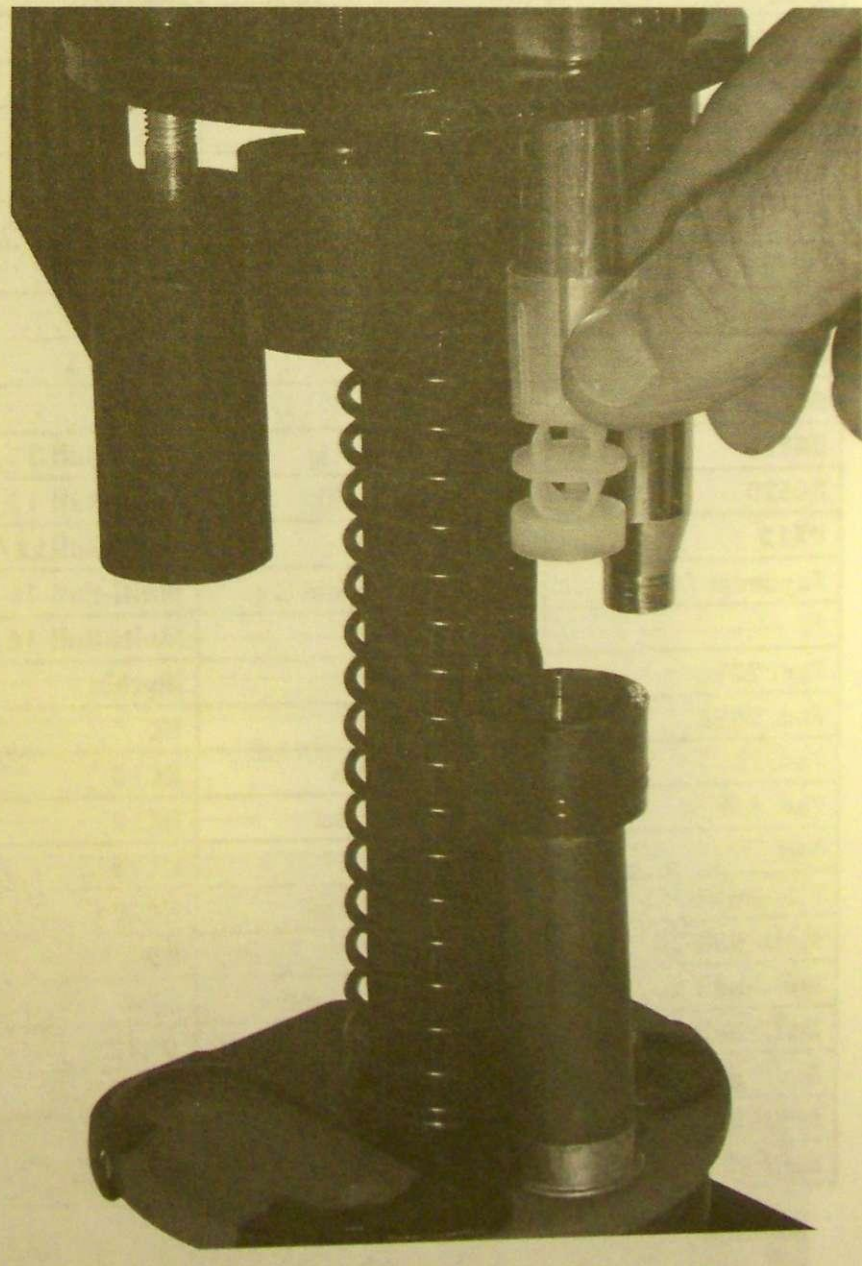
PATTERN SPREAD (INCHES)*

*This chart specifies the diameter (in inches) of the spread covered by the bulk of the pellets at known distances by choke.

American Choke	Constriction	Range in Yards						
		10	15	20	25	30	35	40
Cylinder	.000"	20	26	32	38	44	51	58
Skeet 1	.005"	15	20	26	32	38	44	51
Improved Cylinder	.010"	13	18	23	29	35	41	48
Modified	.020"	12	16	21	26	32	38	45
Improved Modified	.030"	10	14	18	23	29	35	42
Full	.040"	9	12	16	21	27	35	40

WAD CHART

The following chart shows wads that may be substituted for current popular models as listed in IMR Shotshell Reloading Data.
WAA12: WT12 Winchester, CB01118, CB1118-12, Black Magic, Blue Duster
WAA12SL: CB1100-12, Green Duster, WAA12L, and CB)178-12 (in 7/8-ounce loads only)
Federal 12S0: CB2100-12
Federal 12S3" CB2118-0-12
Remington Fig. 8: CB3118-12A
Windjammer: CB4118-12
WAA20: CB1078-20, Duster 20
WAA28: CB1034-28, Duster 28
WAA41: CB1050-41, Duster 410
Federal 410 SC: CB1050-41
Remington SP410: CB1050-41
WAA12R:CB1138-12
WAA12F114: CB1114-12
Primer Substitution: The Nobel Sport 209 primer may be safely substituted wherever the Winchester 209 primer is shown.



The following abbreviations relate to wads and components from Ballistic Products (BP) and other suppliers.

14C	1/4" card wad	**Fio. 616**	Fiocchi 616 Primer	**OSC**	Overshot card
23C	2/3" card wad	**Fiocchi**	Fiocchi hull w/7mm basewad	**OS10**	Overshot card (.03 to .04") 10g
38C	3/8" card wad	**Fiocchi 10 1/2mm**	Fiocchi hull w/10 1/2 mm basewad	**OS12**	Overshot card (.03 to .04") 12g
AQ	AQ Slug	**Fiocchi 7mm**	Fiocchi hull w/7mm basewad	**OS16**	Overshot card (.03 to .04") 16g
Barnes Exp	Barnes Expander SGS Sabot Slug	**Fiocchi 85mm**	Fiocchi 12g 3 1/2" hull	**OS20**	Overshot card (.03 to .04") 20g
BP12	12g Ballistic Pattern Driver wad	**FW**	Felt Wad	**Pisk**	Piston Skeet 12g wad
BP12T	BP12-Tuff Steel Shot wad 12g	**gr**	Grains	**Rem. 209**	Remington209 Primer
BPD10T	BPD10-Tuff Steel Shot wad 10 g	**GS2**	New GS2 Air Wedge	**Rem. Lo-disc**	Remington hull w/low disc base wad
BPGS	Ballistic Products Gas Seal	**Hevi-Shot**	Hevi-Shot non-toxic tungsten-matrix shot	**Rem. RTL**	Remington RTL-type hull
BSB	Bismuth Buffer	**HCD18**	Helix Cushion Driver #18	**Rem. SP**	Remington SP-type hull
BW12	Brush Wad (Original) 12g	**HCD21**	Helix Cushion Driver #21	**Rem. STS**	Remington STS-type hull
BW24	Brush Wad 24g	**HCD24**	Helix Cushion Driver #24	**Rem. STS209**	Remington 209 Primer (gold/green box)
BW28	Brush Wad 28g	**HCDP**	Helix Brush Wad	**Rem. Type 6**	Remington hull - black or yellow basewad
BW410	Brush Wad .410	**HCW**	1/2" card wad	**Rex24**	Rex 24 7/8 target wad
CCI 209	CCI 209 Primer	**HV28**	Magnum 28 wad - 28g	**RPlus**	Ranger-Plus 12g steel wad
CCI 209M	CCI 209 Magnum Primer	**Improved Foster**	Improved Foster-type slug	**RP12**	Ranger-Plus 12g steel wad
CCI 209SC	CCI 209 Sporting Clays Primer	**LB12**	Light Brush wad 12g	**SKB***	Super Buckshot lead shot
CCS12	Collet Cup Sabot Slug 12g	**LBC30**	Limited Bore Contact 12g 30mm	**SCAT**	Scattermaster 12g wad
CCS20	Collet Cup Sabot Slug 20g	**LBC43**	Limited Bore Contact 12g 43mm	**SF12**	Spitfire 12g wad
CE	Compact Eurotarget 12g wad	**LBC50**	Limited Bore Contact 12g 50mm	**SG16**	Sporting 16 wad 16g
Ch. 209	Cheddite 209 Primer	**LBC BluForce**	LBC BluForce Sabot Slug	**SG20L**	Sporting 20 long wad - 20g
CL*	Chilled Lead shot	**LGS28**	Light Game Slug 28g	**SG20S**	Sporting 20 short wad - 20g
CLBC	Cushioned LBC wad	**LGS41**	Light Game Slug .410	**SG24**	Sporting 24 wad - 24g
COS12	Clear overshot disc (12g only)	**L078**	Lightning 7/8 oz. 12g wad	**SG28-II**	Sporting 28-II (2nd version) 28g wad
CP*	Copper-Plated Lead shot	**M209**	Multi-Hull/Martingoni 209 Primer	**SG32**	Sporting 32 wad - 32g
CS12	Competition Special 12g wad	**MG410**	Magnum .410 wad	**SG410**	Sporting 410 wad
CSD020	Cushioned Shot Driver 20g	**MG42**	MG42 wad (now called "STS")	**SPK**	Super Spark 12g wad
CSD078	Cushioned Shot Driver 12g 7/8 oz.	**MICA**	Mica dry-lubricant dust	**SRC**	Short Ranger Crusher 12g wad
CSD100	Cushioned Shot Driver 12g 1 oz.	**Mix 47**	Mix #47 buffering agent	**Stretch**	Stretch 36 wad - 410 bore
CSD118	Cushioned Shot Driver 12g 1 1/8 oz.	**ML***	Magnum Lead shot	**STS**	STS wad (otherwise "MG42")
CW	Cork wad	**MM1035**	Multi-Metal 10g 3 1/2" wad	**Stump**	Stump 36 wad - 410 bore
CW/FW	Cork wad or felt wad	**MM1230**	Multi-Metal 12g 3" wad	**TC20**	Trap Commander 20g wad
Deci-Max	Deci-Max 10g wad	**MM1235**	Multi-Metal 12g 3 1/2" wad	**TEF10**	10g Teflon shot sleeve
DGS12	Dangerous Game Slug 12g (1/8 oz.)	**MM1275**	Multi-Metal 12g 2 3/4" wad	**TEF12**	12g Teflon Shot sleeve
DGS123	Dangerous Game Slug 3" 1 3/8 oz.	**MM16**	Multi-Metal 16g 2 3/4" wad	**Thunderbolt**	Dangerous Game Slug 12g 3" 1 3/8 oz.
DGS16	Dangerous Game Slug 16g	**Multi-Hull 12/2A**	BP Multi-Hull 12g 2 3/4" - Martinigoni	**TPS1035**	TPS 10g 3 1/2" wad (unslit)
DGS20	Dangerous Game Slug 20g	**Multi-Hull 12/2A.1**	BP Multi-Hull 12g 2 3/4" - Cheddite	**TPS1230**	TPS 12g 3" wad (unslit)
DX12	Dispersor-X 12g wad	**Multi-Hull12/3A**	BP Multi-Hull 12g 3" -Martingoni	**TPS1235**	TPS 12g 3 1/2" wad (unslit)
Expander SGS	Barnes Expander SGS Sabot Slug	**Multi-Hull 16/2A**	BP Multi-Hull 16g 2 3/4" - Cheddite	**TPS1275**	TPS 12 g 2 3/4" wad (unslit)
FC	1/2" Fiber Filler wad	**Multi-Hull 16/2A.1**	BP Multi-Hull 16g 2 3/4" - Martingoni	**TR12**	Turkey Ranger wad
Fed. 209A	Federal 209 Primer	**Mythin**	Thin Mylar wraps	**trim**	trim component by specified amount
Fed. 209A	Federal 209A Primer	**NC**	Nitro Card .100" to .125"	**TY34**	Tyvek 3/4" patch
Fed. FB	Federal Fiber Base Hulls	**NC10**	10g Nitro Card	**TY58**	Tyvek 5/8" patch
Fed. GM	Federal "Gold Medal" hull	**NC12**	12g Nitro Card	**USE**	Ultra-Short Eurotarget 12g wad
Fed. HP	Federal High Powder hull	**NC16**	16g Nitro Card	**W209**	Winchester 209 Primer
Federal Field	Federal Field Fiberbase hull	**NC20**	20g Nitro Card	**Wad Slick**	Mica Wad Slick dry-lubricant dust
Multi-Hull 20/2A.1	BP Multi-Hull 20g 2 3/4" - Cheddite	**NP***	Nickel-Plated Lead shot	**WAA**	Winchester AA
Multi-Hull 20/3A.1	BP Multi-Hull 20g 3" - Cheddite	**o/u**	over and under shot column	**WAAHS**	New Winchester AA High Strength hull
Multi-Hull 28/2A.1	BP Multi-Hull 28g 2 3/4" - Cheddite	**OB12**	Obturator 12g gas seal	**Win. Poly**	Winchester Polyformed hull
Multi-Hull 410/2A.1	BP Multi-Hull 410 2 1/2" - Cheddite	**OB16**	Obturator 16g gas seal	**X12X**	X12X gas seal
Multi-Hull 410/3A.1	BP Multi-Hull 410 3" - Cheddite	**OB20**	Obturator 20g gas seal	**Z16**	16 Field Commander 16g wad
Mythick	Thick Mylar wraps	**Original**	Original buffer	**Z21**	12g Trap Commander

LEAD SHOT PER LOAD*

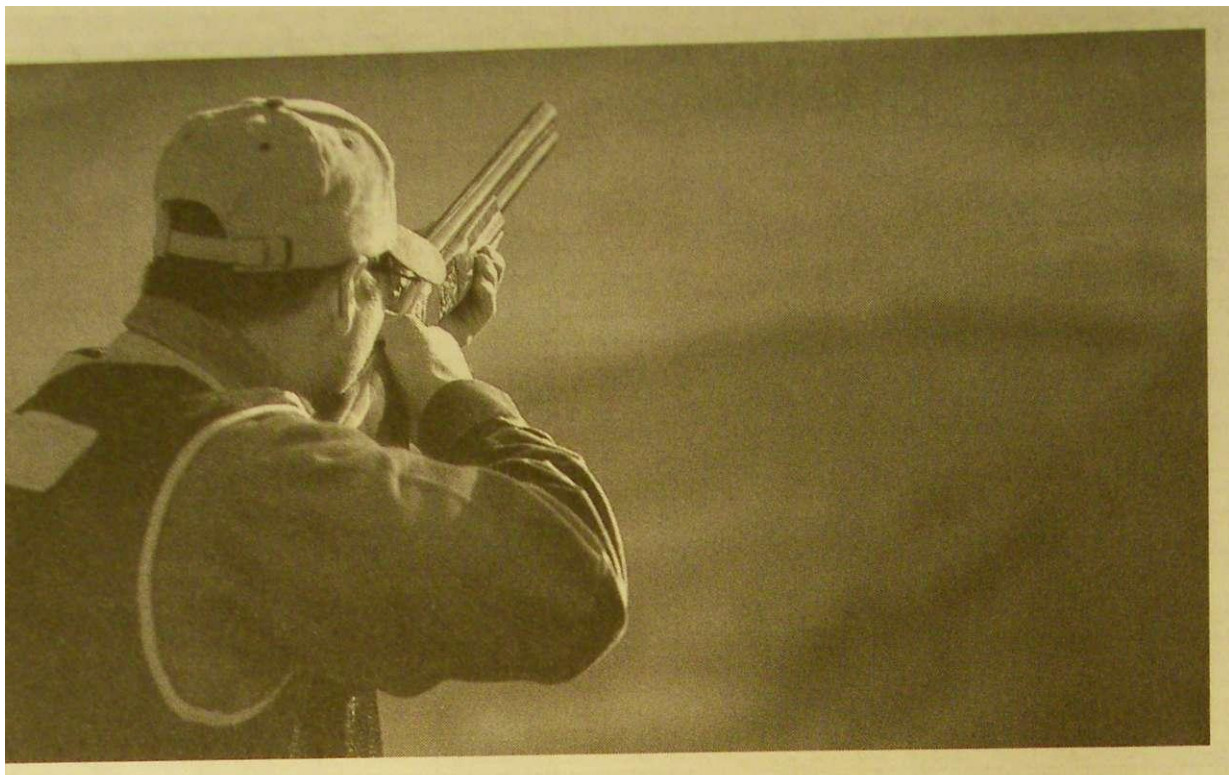
Shot Size	Shot Diameter (in.)	1/2 oz.	5/8 oz.	3/4 oz.	7/8 oz.	1 oz.	1 1/8 oz.	1 1/4 oz.	1 3/8 oz.	1 1/2 oz.	1 5/8 oz.	1 3/4 oz.	1 7/8 oz.	2 oz.	2 1/8 oz.
#9	0.08	293	366	439	512	585	658	731	804	878	951	1024	1097	1170	1243
#8 1/2	0.085	240	300	360	420	480	540	600	660	720	780	840	900	960	1020
#8	0.09	205	256	307	358	409	460	511	562	614	665	716	767	818	869
#7 1/2	0.095	173	216	259	302	345	388	431	474	518	561	604	647	690	733
#7	0.10	150	187	224	262	299	336	374	411	449	486	523	561	598	635
#6	0.11	112	139	167	195	223	251	279	307	335	362	390	418	446	474
#5	0.12	86	108	129	151	172	194	215	237	258	280	301	323	344	366
#4	0.13	68	85	102	119	136	153	170	187	204	221	238	255	272	289
#2	0.15	44	55	66	77	88	99	110	121	132	143	154	165	176	187
BB	0.18	25	31	38	44	50	56	63	69	75	81	88	94	100	106
BBB	0.19														
T	0.20														
F	0.22														
Buckshot #4	0.24					27 to 41									
Buckshot #3	0.25					20 to 24									
Buckshot #2	0.27					15 to 24									
Buckshot #1	0.30					11 to 24									
Buckshot #0	0.32					12 to 24									
Buckshot #00	0.34					9 to 18									
Buckshot #000	0.36					8 to 10									
Buckshot #0000	0.38					5 to 6									

*The number of individual pellets listed per load are courtesy Hodgdon Chilled Shot Table. Actual numbers (weights and sizes) in other recipes often vary. 1 ounce = 437.5 grains.

MEC Shot Bars

Lead Shot Bars		Steel Shot Bars		Steel Shot Bars		Skeet Special*			
Bar No.	Oz. shot	Bar No.	Oz. Shot	Bar No.	Oz. Shot	Single Stage Bar No.	Progressive Bar No.	Oz. Shot	Gauge
214	2 1/4	50207814	7/8 (#1 - #4)	30207814	7/8 (#1 - #4)	302118SS	502118SS	1 1/8	12
200	2	50207856	7/8 (#5 - #6)	30207856	7/8 (#5 - #6)	30278SS	50278SS	7/8	20
178	1 7/8	502100BB2	1 (BB - #2)	302100BB2	1 (BB - #2)	30234SS	50234SS	3/4	28
134	1 3/4	50210036	1 (#3 - #6)	30210036	1 (#3 - #6)	30212SS	50212SS	1/2	410
158	1 5/8	502118BB3	1 1/8 (BB - #3)	302118BB3	1 1/8 (BB - #3)				
112	1 1/2	50211846	1 1/8 (#4 - #6)	30211846	1 1/8 (#4 - #6)				
138	1 3/8	502114BB2	1 1/4 (BB - #2)	302114BB2	1 1/4 (BB - #2)				
114	1 1/4	50211436	1 1/4 (#3 - #6)	30211436	1 1/4 (#3 - #6)				
1316	1 3/16			302138BB2	1 3/8 (BB - #2)				
118	1 1/8			30213836	1 3/8 (#3 - #6)				
100	1			302112BB2	1 1/2 (BB - #2)				
78	7/8s			30211236	1 1/2 ($3 - #6)				
34	3/4s								
1116	11/16								
58	5/8								
12	1/2								

*MEC Note to skeet shooters: When using soft #9 shot with our standard bar, it is possible that your charge weight will exceed that which is allowed by the NSSA. By using our Skeet Special Charge Bars, you will stay within the limits set by the NSSA.



POWDER CONVERSION: GRAINS/LOAD/POUND

Grains/load	Loads/pound
12	583
13	538
14	500
15	466
16	437
17	411
18	388
19	368
20	350
21	333
22	318
23	304
24	291
25	280
26	269
27	259
28	250
29	241
30	233
31	225
32	218
33	212
34	205
35	200
36	194
37	189
38	184
39	179
40	175
41	170
42	166
43	162

* Courtesy Mayville Engineering Company (MEC) Depending upon composition and density of the powder, other charts may vary.

PONSNESS/WARREN SHOT BUSHINGS

Standard Lead		L/S-1000 Lead		L/S-1000 Steel		
Number	Weight	Number	Weight	Number	Weight	Size
#1	1/2 oz.			S1	7/8 oz.	#3-#5
#2	5/8 oz.			S2	7/8 oz.	#6-#8
#2.5	11/16 oz.			S3	1 oz.	BB-#2
#3	3/4 oz.			S4	1 oz.	#3-#5
#4	7/8 oz.	L4	7/8 oz.	S5	1 oz.	#6-#8
#5	1 oz	L5	1 oz	S6	1 1/8 oz.	BB-#2
#5.5	1 1/16 oz.	L5.5	1 1/16 oz.	S7	1 1/8 oz.	#3-#5
#6	1 1/8 oz.	L6	1 1/8 oz.	S8	1 1/8 oz.	#6-#8
#7	1 1/4 oz.	L7	1 1/4 oz.	S9	1 1/4 oz.	BB-#2
#8	1 3/8 oz.	L8	1 3/8 oz.	S10	1 1/4 oz.	#3-#5
#9	1 1/2 oz.	L9	1 1/2 oz.	S11	1 1/4 oz.	#6-#8
#10	1 5/8 oz.	L10	1 5/8 oz.	S12	1 3/8 oz.	BB-#2
#11	1 3/4 oz.	L11	1 3/4 oz.	S13	1 3/8 oz.	#3-#5
#12	1 7/8 oz.	L12	1 7/8 oz.	S14	1 3/8 oz.	#6-#8
#13	2 oz.	L13	2 oz.	S15	1 1/2 oz.	BB-#2
#14	2 1/4 oz.	L14	2 1/4 oz.	S16	1 1/2 oz.	#3-#5
				S17	1 1/2 oz.	#6-#8
				S18	1 5/8 oz.	BB-#2
				S19	1 5/8 oz.	#3-#5

When loading steel shot, you cannot use the same shot bushings used for lead. When loading lead shot, you cannot use the same shot bushings used for steel. Never use a steel shot bushing to throw lead shot charges. This will result in an over-charge of lead shot which may result in serious injury or death to persons and damage to firearms or property.

SHOT CONVERSION CHART

Weight Ounces		1/2	5/8	3/4	7/8	1	1.1	1.2	1.3	1.5	1.6	1.7	1.8	2	2.1
Weight Grains		219	273	328	382	438	492	547	602	656	711	766	820	875	930
Loads Per Lb.		32	36	21	18	16	14	13	12	11	10	9	9	8	8

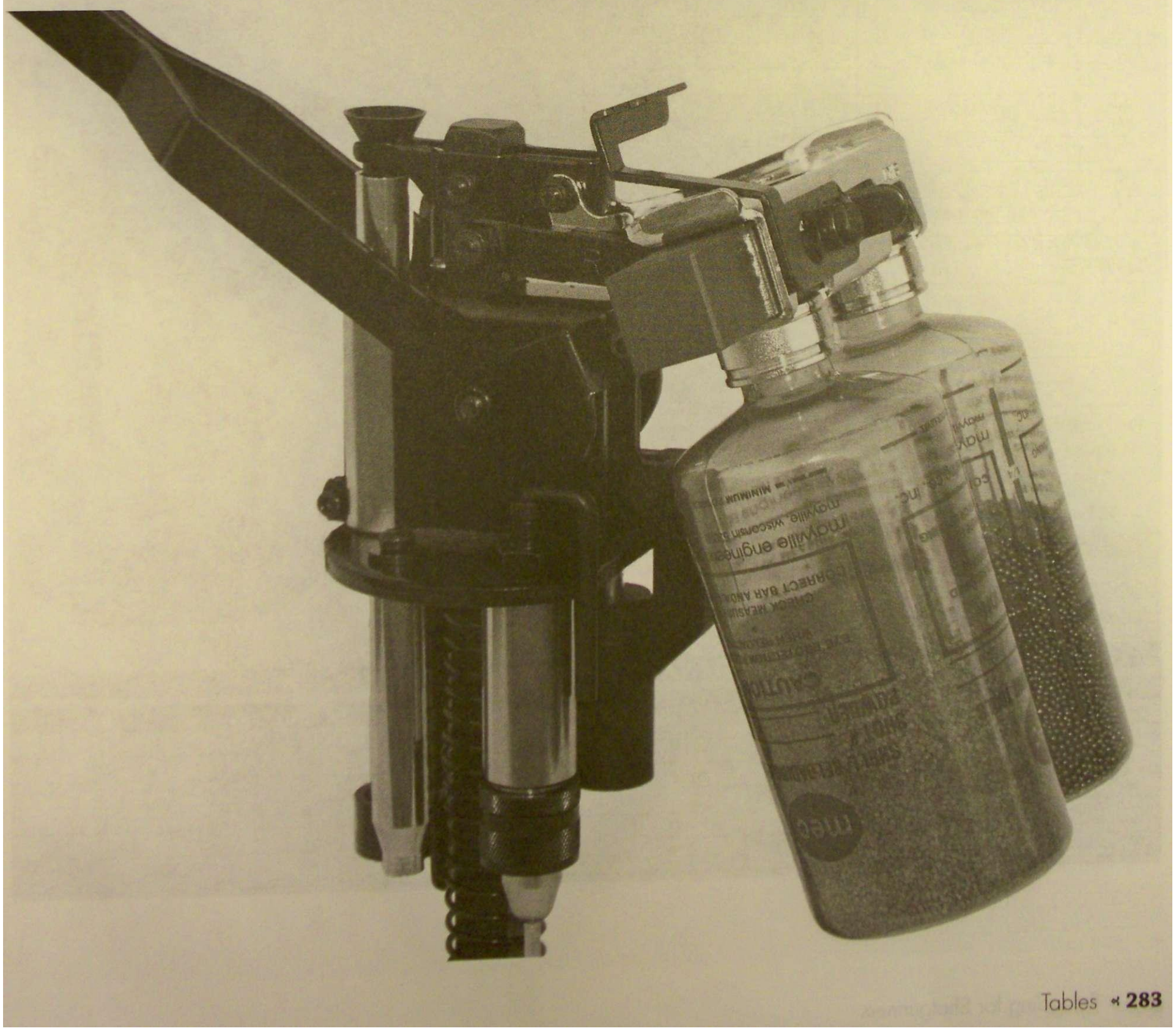
Size	Dia. in Inches	Approximate No. of Pellets per Load (lead shot only)													
#BB	0.18	25	31	38	44	50	56	63	69	75	81	88	94	100	106
#2	0.15	44	55	66	77	88	99	110	121	132	143	154	165	176	187
#4	0.13	68	85	102	119	136	153	170	187	204	221	238	255	272	289
#5	0.12	86	108	129	151	172	194	216	237	258	280	301	323	344	366
#6	0.11	112	139	167	195	223	251	279	307	335	362	390	418	446	474
#7	0.10	150	187	224	262	299	336	374	411	449	486	523	561	598	635
#7 1/2	0.095	173	216	259	302	345	388	431	474	518	561	604	647	690	733
#8	0.09	205	256	301	358	409	460	511	562	614	665	716	767	818	869
#8 1/2	0.085	240	300	360	420	480	540	600	660	720	780	840	900	960	1020
#9	0.08	293	366	439	512	585	658	731	804	878	951	1024	1097	1170	1243

Based on MEC Chilled Shot

STEEL SHOT PELLETS PER LOAD

Size	Diameter (inches)	Weight (grains)	3/4 oz.	7/8 oz.	15/16 oz.	1 oz.	1 1/8 oz.	1 1/4 oz.	1 1/2 oz.	1 5/8 oz.	1 3/4 oz.	1 7/8 oz.	2 oz.
#9	0.08	0.530	619	722	514	825	928	1031	1238	1341	1444	1547	1650
#8	0.09	0.7	411	480	396	548	617	685	822	891	959	1028	1096
#7	0.10	1.090	316	369	395	422	475	527	633	659	739	791	844
#6	0.11	1.404	236	273	295	315	354	394	472	492	545	584	623
#5	0.12	1.854	182	206	228	243	273	304	364	380	413	442	472
#4	0.13	2.302	144	166	180	192	216	240	288	300	333	356	380
#3	0.14	2.862	118	134	143	158	178	197	237	247	268	287	306
#2	0.15	3.528	94	109	117	125	141	156	187	195	217	233	248
#1	0.16	4.289	77	89	97	103	116	129	154	161	179	191	204
BB	0.18	5.993	54	64	67	72	81	90	108	112	128	137	146
BBB	0.19	7.292	46	53	58	62	70	77	93	97	105	113	120
T	0.20	8.413	39	46	49	52	58	65	78	81	91	98	104
F	0.22	11.22	30	34	37	40	45	50	60	62	68	73	78
#4 Buck	0.24	5.335	19 - 20	22 - 23	24 - 25	26	29 - 30	32 - 33	39	42 - 43	45 - 46	45 - 46	52
#1 Buck	0.30	33.65	9 - 10	11 - 12	12 - 13	13	14 - 15	16 - 17	19 - 20	21 - 22	22 - 23	20 - 21	26
#00 Buck	0.33	43.75	7 - 8	8 - 9	9 - 10	10	11 - 12	12 - 13	15	16 - 17	17 - 18	18 - 19	20

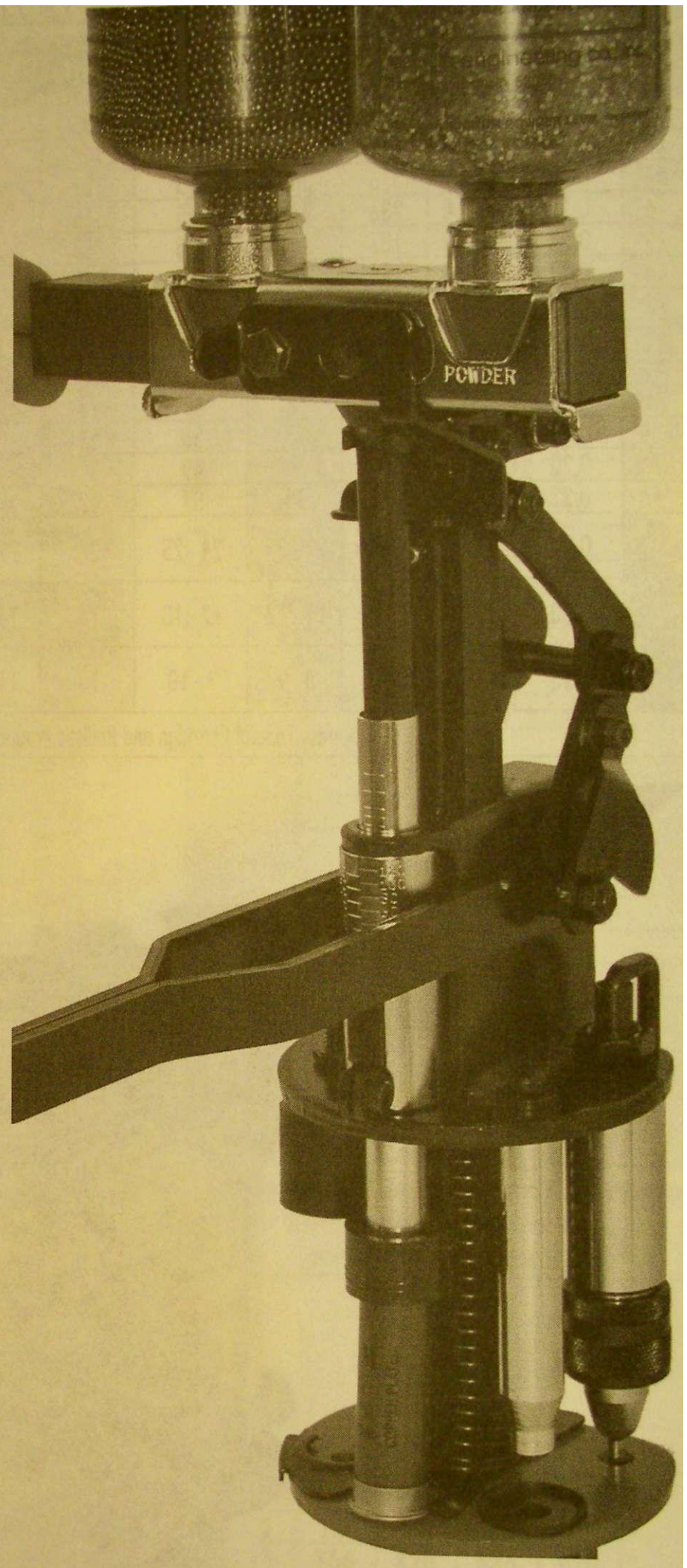
Courtesy Federal Cartridge and Ballistic Products. Numbers may vary by source of information.



SLUGS - BY THE NUMBERS*

Gauge	Slug Type	Weight (grains)	Diameter / Length (inches)
10	Defender	655	.116/.935
12	Dangerous Game Slug (Thunderbolt)	607	.734/2.00
	Round Ball	550	.715/.715
	Round Ball	495	.690/.690
	Dangerous Game Slug (w/carrier)	474	.730/1.85
	Improved Foster 1.0 oz.	438	.660/.771
	AQ Slug	437	.730/1.20
	Barnes Expandere SGS	436	.575/1.78
	Defender	436	.660/.705
	Collet Cup Sabot (.50 bullet)	381	.750/.972
	Improved Foster 7/8 oz.	380	.660/.740
	Collet Cup Sabot (.45 bullet)	354	.735/.955
16	Dangerous Game Slug	448	.670/1.94
	Improved Foster	328	.600/.655
20	Grizzly	433	.616/923
	Dangerous Game Slug	389	.629/1.90
	Defender	383	.615/.613
	Improved Foster	285	.590/.725
	Collet Cup Sabot (.45 bullet)	284	.656/.878
28	Improved Foster	274	.505/.684
	Dangerous Game Slug	213	.505/1.67
.410	Improved Foster	120	.385/.450
	Dangerous Game Slug	97	.735/1.78

* Courtesy Ballistic Products, Inc. "All measurements an average of 25 random samplings." [763-494-9236]



TUNGSTEN/IRON SHOT PER LOAD

Shot Size	Shot Diameter (in)	7/8 oz.	1 oz.	1 1/8 oz.	1 3/8 oz.
#5	0.12	154	177	198	242
#4	0.13	122	140	157	192
#2	0.15	82	94	106	129
BB	0.18		54	60	74
BBB	0.19		46	51	63

Courtesy Federal Cartridge.

SHOTSHELL GAME BIRD & SMALL GAME GUIDE

Game	Shot	Gauge	Choke	Shot Size
Geese	Steel	10, 12	Mod, Imp Mod	T, BBB, BB, 1, 2
Ducks	Steel	10, 12, 20	Imp Cyl, Mod, Imp Mod	1, 2, 3, 4, 6
Turkey	Lead	10, 12, 16, 20	Full	4, 5, 6
Pheasants	Lead	12, 16, 20	Full, Imp Cyl, Mod, Imp Mod	4, 5, 6, 7.5
	Steel	12, 20	Imp Cyl, Mod, Imp Mod	4, 6, 7
Grouse, Partridge	Lead	12, 16, 20, 28	Imp Cyl, Mod	5, 6, 7.5, 8
Woodcock, Snipe, Rail	Lead	12, 16, 20, 28	Imp Cyl, Mod	6, 7.5, 8
	Steel	12, 20	Imp Cyl, Mod	4, 6, 7
Quail	Lead	12, 16, 20, 28	Imp Cyl, Mod	7.5, 8
Dove	Lead	12, 16, 20, 28	Imp Cyl, Mod, Imp Mod	7.5, 8
	Steel	12, 20	Imp Cyl, Mod, Imp Mod	6, 7
Rabbit	Lead	12, 16, 20, 28, .410	Imp Cyl, Mod	4, 5, 6, 7.5
Squirrel	Lead	12, 16, 20, 28, .410	Mod, Imp Mod, Full	4, 5, 6

Courtesy many sources including Federal Cartridge.

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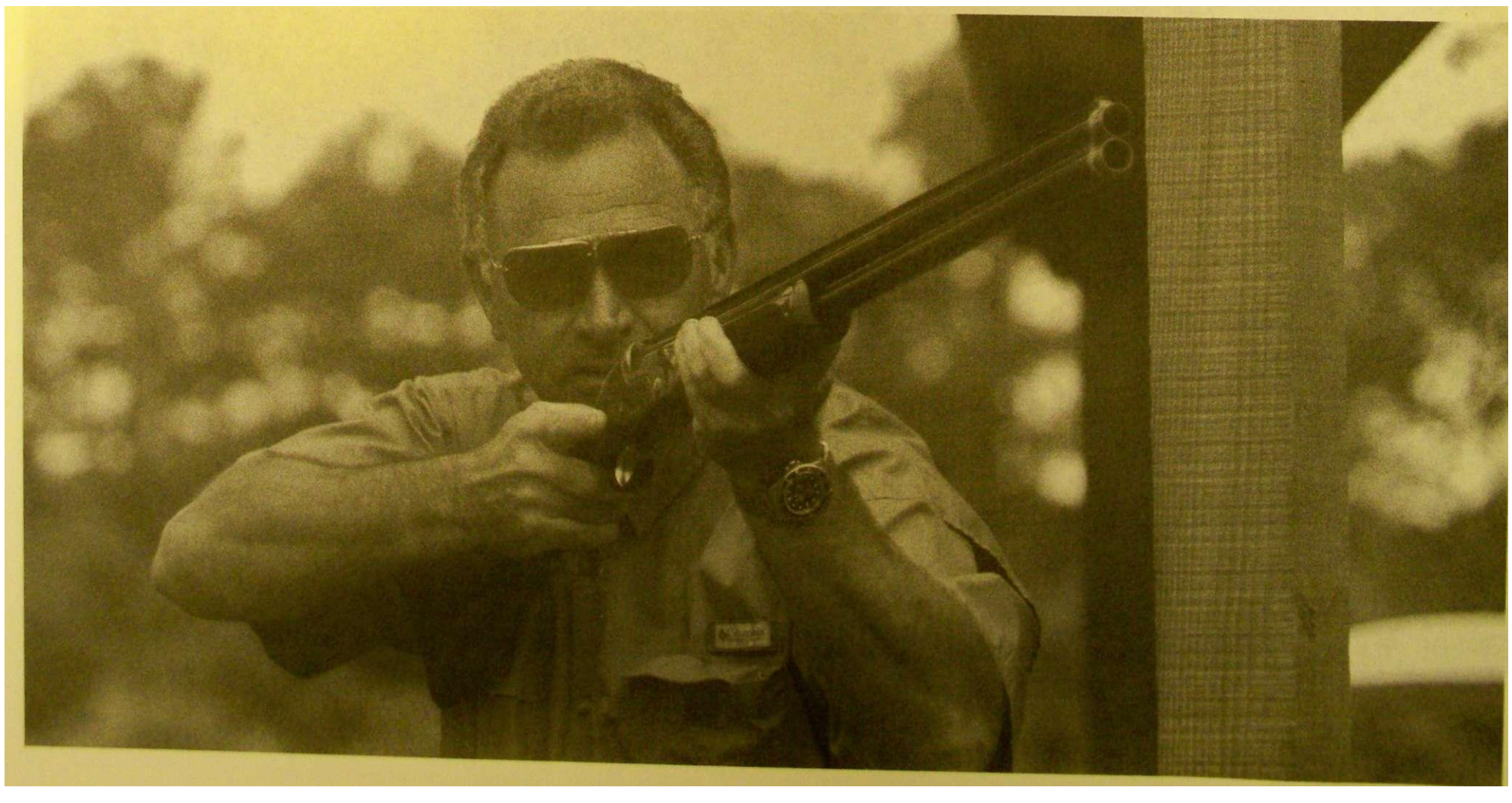

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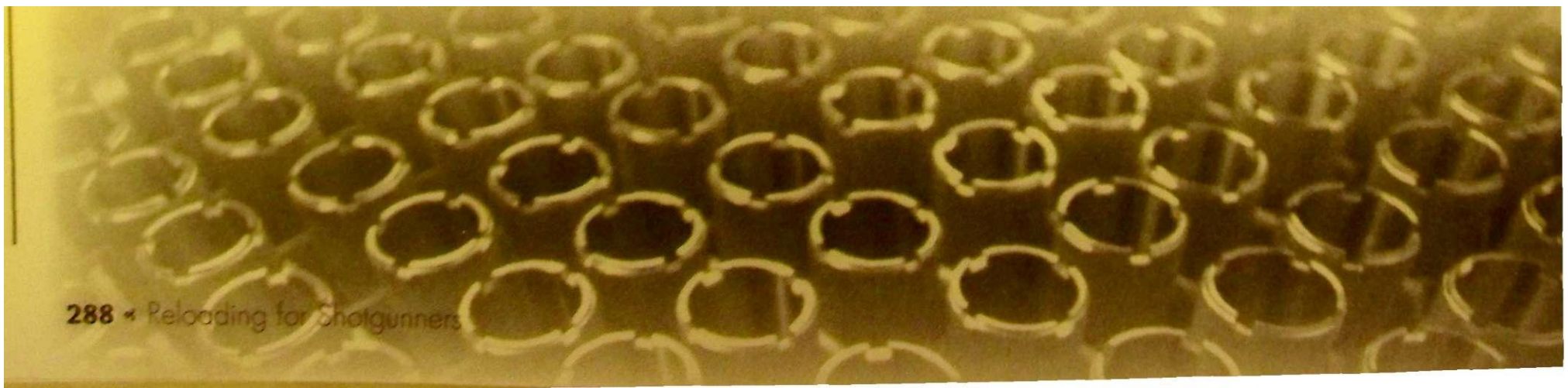
** Information was correct as of January 2005.*



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